Petroleum news

BAKKEN

page 19 Who's Who: Kodiak O&G's Lynn A. Peterson, steady at the helm

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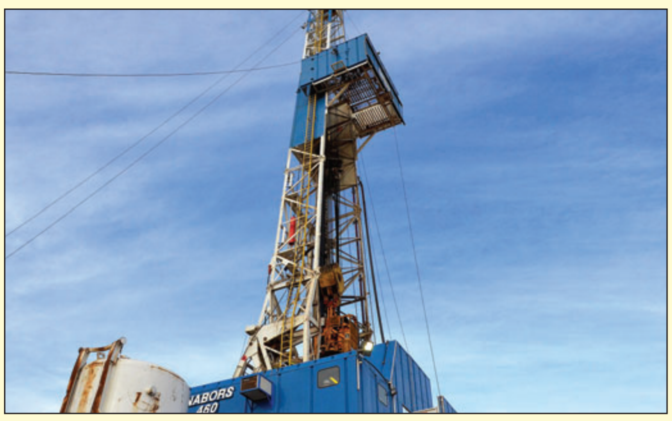
North Dakota thumps Alaska



COURTESY STATOIL

Statoil/Brigham oil drilling in North Dakota pictured above. Regarding the story below, with natural gas liquids, the bulk of which are shipped down the trans-Alaska oil pipeline with North Slope crude, Alaska's March production was 620,067 barrels of oil per day versus the 567,481 bopd presumed in the article below. An average oil well in Alaska produced 359 bopd in 2011 from 1,532 wells, as compared to North Dakota's 6,565 wells with an average production of 64 bopd.

March output makes North Dakota second biggest U.S. oil producer

North Dakota has passed Alaska to become the second-leading oil-producing state in the U.S., trailing only Texas, state officials said May 15.

North Dakota oil drillers pumped 17.8 million barrels in March, with a daily average of 575,490 barrels, said Assistant North Dakota Oil and Gas Division Director Bruce Hicks. That compares to 17.6 million in Alaska, though still far behind Texas.

The state's oil patch is drilling at record levels and shows little sign of slowing down. The 152.9 million barrels of crude oil produced in 2011 set a record, surpassing the pre-

see PRODUCER RANKING page 21

Pipeline relief for Bakken, oil sands crude by doubling 6B

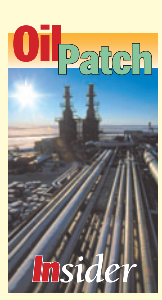
Enbridge has filed a proposal with Michigan regulators to spend $1.3 billion doubling capacity of its Line 6B to 500,000 barrels per day in response to demand from refiners for cheap Canadian crude from the Bakken and oil sands plays.

The application to the Michigan Public Service Commission said there is growing demand that is largely driven by "ongoing and planned refinery upgrades and expansions" in Michigan and Ohio and "near-term anticipated demand increases by Eastern Canadian refineries for growing crude supplies."

Enbridge said the project has backing from eight refineries served by the line, along with the Canadian Association of

see PIPELINE RELIEF page 21

The non-shale Bakken 'shale play' might soon become a true shale play



CURRENTLY, ALMOST NO BAKKEN PRODUCTION contains oil extracted directly from the organic-rich shale members of the Bakken petroleum system. Rather it comes from tight, conventional reservoirs close to the shale/source rock zones; the largest producer being a dolomitic sandstone reservoir called the Middle Bakken.

Anywhere else in the world that would make the Bakken system a tight oil play, not a shale play.

But that ship has sailed. 'Bakken shale' has become

see INSIDER page 16

LAND & LEASING

Dea snags STL

Norwegian oil giant joins Cirque to evaluate, develop Heath tight oil leases

By KAY CASHMAN
Petroleum News

PETER DEA

Peter Dea brought in Norway's largest oil company, Statoil ASA (STL), to help Cirque Resources LP evaluate and develop its Heath formation leases in central Montana.

But unlike Statoil's October buyout of Brigham Exploration Co. to gain access to Bakken and Three Forks tight oil plays, Cirque, a closely held Denver firm founded by Dea in 2007, will remain operator of the shared Heath acreage.

Statoil, which is looking to expand its North American unconventional reserves, bought stakes as high as 50 percent in "several blocks" of Cirque's Heath acreage, Statoil spokesman Baard Glad Pedersen told Bloomberg reporter Mikael Holter on May 11, although he also said the investment was small.

"We're looking for new opportunities within shale oil and gas," Pedersen told Holter, echoing the sentiments of Statoil President and CEO Helge Lund.

When acquiring Brigham in October, Lund said, "The U.S. unconventional plays hold a substantial resource base and represent an increasingly impor-

see STATOIL JOINS page 17

DRILLING & COMPLETION

Hunt's on for frack sand

Iles: South Dakota looks to supply neighbor with proppants for hydraulic fracturing

By RAY TYSON
Petroleum News Bakken

South Dakota plans to conduct a study to identify suitable sand resources within the state that could be tapped by the private sector to help meet growing demand for sand in hydraulic fracturing markets, primarily in neighboring North Dakota, Petroleum News Bakken has learned.

"It's a study that's being talked about; and it's a study for which I have promised others that we will have a work plan in the coming months," Derric Iles, a state geologist and head of South Dakota's Geological Survey program, said in a recent interview.

Sand is a key component in fracking, which has grown into a multi-billion dollar business as U.S shale plays develop, including the vast Bakken system, the heart of which is situated in North Dakota.

> *"Certainly the customer — the one with the most clout in the room right now — is the oil industry in North Dakota."*
> —Derric Iles

In fracking, sand is pumped with water and chemicals at high pressure into perforated horizontal wells, or laterals, where it flows into cracks in the shale that are opened by the pressure and keeps them open, allowing oil and natural gas to flow out

see FRACK SAND page 21

MOVING HYDROCARBONS

TC, ENB pull out stops

Enbridge tosses C$2B more into mix to reverse, extend, expand pipelines east

By GARY PARK
For Petroleum News Bakken

PAT DANIEL

SEN. LISA MURKOWSKI

Bakken producers on both sides of the United States-Canada border can increasingly see an answer to their hopes of accessing new North American markets by pipeline.

Canadian pipeline companies Enbridge and TransCanada are in full flight, seeking commercial backing and regulatory approval to hasten the extension and expansion of delivery systems to the U.S. Gulf Coast and possibly the Atlantic Seaboard.

Enbridge with partner Enterprise Products Partners has launched its Seaway connection to the Texas Gulf Coast, despite losing an application to the Federal Energy Regulatory Commission to set flexible rates known as a market-based tariff for a system that is targeted at 450,000 barrels per day by year's end and an ultimate 850,000 bpd.

TransCanada announced it had made another stab at gaining a U.S. Presidential Permit for the Keystone XL pipeline to the Gulf Coast.

see PIPELINE SCRAMBLE page 22

contents

Petroleum News Bakken

● DRILLING & COMPLETION

More drilling in lower Three Forks

Continental plans seven more second-bench producers and its first third-bench well; rig count likely to rise going into 2013

By KAY CASHMAN

Petroleum News Bakken

In a May 3 conference call following the release of first quarter earnings, Continental Resources executives told investors they were planning seven more Three Forks second-bench wells, along with their first third-bench well — all in 2012 and early 2013.

"Our first third-bench well will be drilled in the 1,280-acre Charlotte unit. This well will be … 0.5 miles east of the (2011) Charlotte 2-22 second-bench producer and 660 feet east of the Charlotte 1-22 Middle Bakken producer," said Jeff Hume, Continental's president and chief operating officer.


JEFF HUME

"In addition to this third-bench test, we also plan to drill a first-bench Three Forks well between the 1-22 Middle Bakken well and the 2-22 second Three Forks well," Hume said.

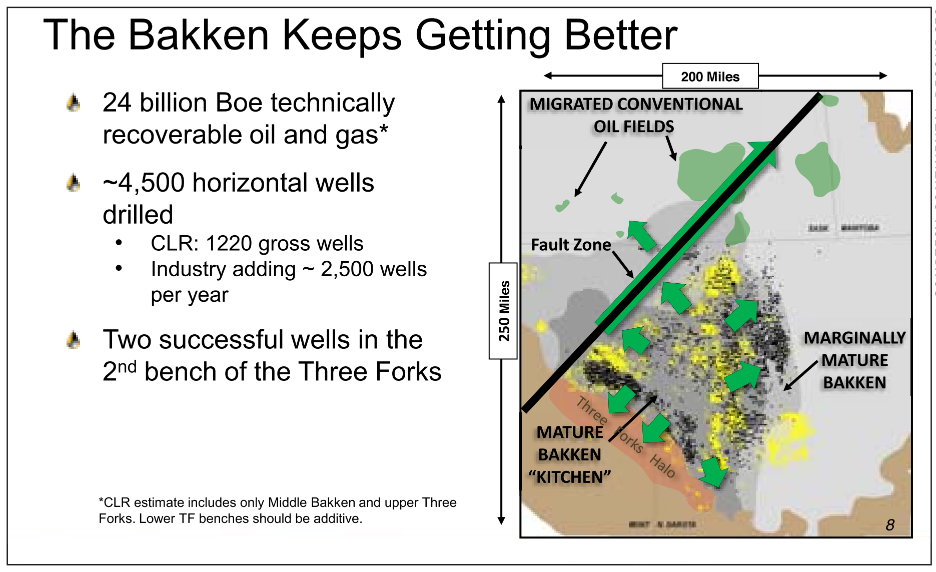
When finished, he said, Continental's Charlotte unit in North Dakota's McKenzie county will be the first 1,280-acre unit in the Williston basin with wells completed in four different members of the Bakken petroleum system.

Starting in mid-2008, Continental was the first company to drill a horizontal well into the first bench, or upper, Three Forks, a variable tight oil reservoir consisting of green and pinkish-tan carbonate mudstone, as well as shale but with no organic content.

The first-bench, or upper Three Forks reservoir, lies about 20 feet below the Lower Bakken shale member, which until recently was where all Three Forks production came from.

Continental has since been joined by Burlington Resources, now part of ConocoPhillips, and Whiting Petroleum, in testing the lower, or second bench, of the Three Forks formation.

In 2011, Oklahoma City-based Continental cut six complete vertical cores of the Three Forks formation, which the company said was 180-270 feet thick under its acreage, over a distance of 115 miles north to south.



COURTESY CONTINENTAL RESOURCES

Hume told Petroleum News Bakken in a May 15 email that two more such core holes have been taken "thus far in 2012. Two more are planned for this year."

"All cores taken to date indicate oil saturation between the base of the Lodgepole to the top of the Nisku Anhydrite, which we consider the Bakken system," Hume wrote.

Similar output to typical first-bench

Hume said Continental was "very pleased" with the performance of its first two second-bench Three Forks wells, the Charlotte 2-22H and the Sunline 11-1, noting the two wells average estimated ultimate recovery, or EUR, would probably be around 650,000 barrels of oil equivalent.

The Charlotte had yielded 64,000 boe since it had come online five and a half months prior; the Sunline had produced 48,000 boe in its first 2.8 months.

"Both wells continue to produce in line with the typical first-bench Three Forks producers," he said.

More oil than previously thought

Hume said the drilling Continental would be "doing the rest of this year and into 2013" in the second- and third-bench Three Forks would prove or disprove that "there's interference between those horizons. Right now, we don't believe there is, but we're going to do the work, spend the money. … I believe we just have a larger petroleum storage system than we previously thought, and the reserves will increase as we get that data in hand, and that will be later this year."

In the email to Petroleum News Bakken he said, "We will test the commerciality of each bench and the separation (or interference) between the benches over the next several years."

Hume did not have a "quantifiable" number on May 3 to go with his prediction, but said the company's budget was based on the 603,000 boe EUR it had previously set for North Dakota Bakken wells.

"Still, there's an upside out there and we're working on that," he said.

Midnight Run

In his presentation, Hume also talked about a 320-acre development under way for the Middle Bakken and the first bench of the Three Forks.

The Midnight Run project, he said, currently had three Middle Bakken and three Three Forks producing wells in a single 1,280-acre unit.

The wells, which had begun production in the first quarter with average initial outputs of 1,300 boe per day, were 1,320 feet apart in each horizon, with the Middle Bakken wells offset by 660 feet from the centerlines of the Three Forks.

Interference testing was under way, Hume said, the results of which would "help guide future drilling density for the play."

90% of Bakken good for Eco-Pads

A shift to more ECO-Pad drilling in North Dakota, which was helping Continental reduce drilling cycle times in the Bakken, was a "key trend" Hume advised investors to watch.

In previous presentations company officials had described ECO-Pad as a drilling technique whereby Continental drilled four wells from a single drilling pad.

"The approach allows us to develop two separate formations on two separate spacing units simultaneously, increasing production efficiency. It also allows us to harvest more of a reservoir's resources while reducing environmental impact on the surface of the land," Continental said in a posting on its website that was dated February 2012.

"While other companies are using a single-pad technique for extracting natural gas, we are using the technology to drill for oil. We completed our first ECO-Pad project in 2010 in Dunn County, North Dakota from the (first bench, or upper) Three Forks and Middle Bakken formations of the North Dakota Bakken."

The ECO-Pad technique "provides an estimated 10 percent cost savings on the drilling and completion of each well," per Continental.

Hume told Petroleum News Bakken that "No ECO-Pads were completed in 1Q12, but several were drilling. Four ECO-Pads were completed in 2010, seven in 2011, and three thus far in 2Q12. There are two in the completion process at this time and six 4-well and two 2-well ECO-

see THREE FORKS DRILLING page 23

Petroleum News Bakken looking for writers

Prefer experienced reporters, but oil industry knowledge also valued.
Contact Kay Cashman at publisher@petroleumnews or 907.561.7517

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Petroleum news

● DRILLING & COMPLETION

Bowood, Legacy target Alberta Bakken

Legacy's management team, led by Trent Yanko, will run Bowood

By GARY PARK
For Petroleum News Bakken

Canadian junior E&P Bowood Energy has made a move towards consolidation of assets in southern Alberta's emerging Bakken play.

It has a deal to acquire assets in the southern Alberta region from Legacy Oil + Gas, including the sales of 68,581 net acres of Legacy's undeveloped land for 2 million common shares of Bowood, including the Bowood/Legacy joint venture land.

The current Legacy farm-in agreement with Bowood will terminate on closing of the transaction, which will result in Legacy owning about 37 percent of the outstanding Bowood shares.

Legacy production has grown in less than three years to 16,300 boe per day from 500 boe per day.

Bowood said the combination of assets with the experienced Legacy team will create a high impact, light oil exploration focused junior with a dominant operated position and leverage in the southern Alberta Bakken, opening the way for the emergence of a larger, stronger and balanced producer with the following attributes:

- 155,974 net acres of undeveloped land in the over-pressured oil window in the Alberta Bakken fairway, including a contiguous 60,512 acre block in the Blood Indian Tribe reserve.
- Multi-zone potential.
- Production of about 500 barrels of oil equivalent per day.
- A proven management team with a track record of value creation in junior companies.
- Access to the leading technical capabilities of a much larger company.

Bowood will have first priority

Bowood will be managed by Legacy's current management team, led by Trent Yanko as president and chief executive officer.

All key Legacy technical, land, accounting and field staff involved with the play since inception will continue to work the area.

Shareholders of Bowood are expected to be asked for approval to change their company's name to LGX Oil + Gas.

Legacy and Bowood have also agreed to an area of exclusion in which Bowood will have first priority over Legacy to pursue any potential acquisition deals.

In addition to two successful wells drilled to date by the two companies, recent disclosure by competitors in the Alberta Bakken has underscored the potential to establish a significant multi-zone light oil resource play.

The new management will also pursue a consolidation strategy within Bowood's core operating area in southern Alberta, increasing exposure to additional high impact light oil resource plays, while focusing on opportunities to build an inventory of oil development drilling locations complementary to the oil resource play exploration program.

Southern Alberta Bakken interest undervalued

Legacy said its interest in the southern Alberta Bakken is considerably undervalued at the company's current market valuation.

It said the Bowood agreement has the potential for its shareholders to unlock and realize significant incremental value not currently reflected in Legacy's share price.

Shareholders of Bowood are expected to be asked for approval to change their company's name to LGX Oil + Gas. And a consolidation of Bowood shares on a 20-for-one basis.

Legacy production has grown in less than three years to 16,300 boe per day from 500 boe per day.

Yanko was previously president and chief executive officer of Mission Oil & Gas, which built its production to 7,000 boe per day from 500 boe per day in two years, largely due to success in the Bakken play of southeastern Saskatchewan. ●

Contact Gary Park through publisher@petroleumnews.com

CORRECTION

Missing information in Continental article

In the May 6 edition of Petroleum News Bakken, a page 1 article about Continental Resources was missing some information.

The article, "No additional rigs," had a paragraph that said this:

"The company's first quarter production of 85,526 barrels of oil equivalent was 14 percent higher than production of 75,219 boe per day for the fourth quarter of 2011— an increase of 66 percent."

The 66 percent increase was the difference in average daily output between first quarter 2011 and first quarter 2012.

Here is how the corrected paragraph in our online versions of the article now reads:

"The company's first quarter production of 85,526 barrels of oil equivalent per day was 14 percent higher than its fourth quarter 2011 output of 75,219 boe per day, and 66 percent more than its 51,663 boe a day average in first quarter 2011."

The error was not caught until after the printed version of the May 6 issue went to press, so the correction was not made in the hardcopy.

—PETROLEUM NEWS BAKKEN

● MIDSTREAM & DOWNSTREAM

Infrastructure puts crimp on Bakken

Potholes big enough to swallow truck; rail execs say refinery closures curbed demand for tanker cars, but expect rise in volumes

By GARY PARK

For Petroleum News Bakken

The midstream and downstream challenges — roads, transportation and refineries — that face the big Bakken, Eagle Ford, Permian and Niobrara plays preoccupied many speakers at recent conferences in Washington, D.C., and Denver.

And it started with gaining access to the prolific plays in North Dakota.

"The infrastructure is stressed," Mark Williams, senior vice president of exploration and development at Whiting Petroleum, told a Platts Rockies Oil and Gas Conference.

"The road system is very difficult. It's difficult to move oil field services in this part of the basin."

He said the takeaway capacity from the Bakken is currently remaining about six to 12 months ahead of production, "but we need a coordinated effort between industry and local governments" to overcome the road problems.

With the downturn in service costs benefiting from the cutback in dry gas drilling, "a lot of equipment has come out of plays such as Haynesville Shale (in Louisiana and East Texas), looking for work," Williams said.

Frontier Energy Group Chief Executive Officer Dan Eberhart described the North Dakota infrastructure problems as "dire."

He said "some roads are literally crumbling. … You've got potholes that could eat a truck," while acknowledging that North Dakota legislators approved a massive investment in roads last year.

More investment needed in NGL systems

But, even if progress is made in that sector, greater investments are needed in pipelines, natural gas liquids processing and gathering systems and finding markets, Tyler Van Leeuwen, project manager with Advanced Resources International, told a conference organized by the Center for Strategic and International Studies and the National Capital Area Chapter of the U.S. Association for Energy Economics.

He said that although tight oil formations in the Bakken and Eagle Ford in Texas, and the Permian basin in Texas and New Mexico, could yield 4 million barrels per day by 2030, and even rise to 9 million bpd, that calculation is based on the assumption of "productive capacity," which takes into account current prices, the availability of rigs and similar factors.

The Bakken alone is currently flaring 100 million cubic feet per day of natural gas because there is no way to move it off site, Van Leeuwen said.

He said his research and consulting firm estimates U.S. unconventional plays, defined as shale areas where crude can only be extracted using horizontal drilling and multistage hydraulic fracturing, hold 44 billion barrels of mostly light, sweet crude and 57 billion barrels of NGLs.

Sarah Emerson, principal of Energy Security Analysts, said expansion of tight oil prospects could be hindered by how fast midstream assets are improved and how much heavy, sour crude enters the U.S. from Canada.

She doubted the U.S. will even produce 9 million bpd of oil and NGLs "because the price of oil would probably be too low to warrant production."

"There's a balance between what we can absorb as a country and what we can produce," Emerson said, noting the challenges posed by U.S. Gulf Coast refineries that are primarily being set up to process increasing volumes of heavy sour crudes from the Middle East, Africa and Canada, while liquid fuels demand could steadily decline as consumers shift to renewable fuels.

No demand from East Coast — yet

Pipeline and rail transporters at the Platts conference said that although there is the potential to deliver more crudes from the midcontinent to the U.S. East Coast, no projects are in the works and refiners are not yet clamoring for supplies.

Rail executives said crude deliveries to the East Coast might eventually have some potential, but demand has not been forthcoming, especially from East Coast refineries where 690,000 bpd of capacity has been shut down in the Philadelphia area alone.

Sam Calabro, an assistant vice president with Union Pacific Railroad, said his company has established an interchange track with eastern carriers and "could fold deliveries right into our network," but demand has "not really hit our radar screen at this point."

Darin Selby, assistant vice president of energy sales and marketing for Kansas City Southern Railway, said carrying either crude or products by rail would be feasible for his company if the need materialized.

However, Calabro said 30,000 tank cars (each one holding about 700-750 barrels) carried crude last year on Union Pacific and should increase "substantially" this year, while Kansas City Southern expects to rise from hundreds of tank cars in 2011 to more than a thousand this year.

Both railroads ship oil from the Bakken and Niobrara, with Union Pacific adding volumes from the Eagle Ford.

Selby quoted the North Dakota Pipeline Authority's estimate that rail terminal capacity could double this year to 700,000 bpd, more than current Bakken output.

He said opportunities are also building for his railroad to transport frac sands, mainly from Wisconsin where EOG Resources owns a processing facility, and, unlike crude, there is no competition from pipelines.

Jennings: Crude prices will stay volatile

Mike Jennings, chief executive officer of midcontinent refiner Holly Frontier, told a first-quarter earnings call May 7 that new rail infrastructure has narrowed the price differential between Bakken crude and West Texas Intermediate, but cautioned that the premium to ship by rail along with increased production out of the play will keep crude prices volatile.

He said rail activity has gathered pace in a "big way" and the variable cost of rail shipments is probably $8-$10 per barrel.

Jennings said that "considerable" rail infrastructure has been built in the Bakken over recent months, but that has been offset by the rapid growth in output, estimating the annual ramp up is current-

see **INFRASTRUCTURE** page 6

More black gold out there

A handful of other zones lying above and below the Bakken formation offer enticing prospects for future development, company executives told a Platts Rockies Oil and Gas Conference in Denver in April.

The list in North Dakota and Montana of the Tyler-Heath, Mission Canyon, Duperow, Winnipegosis, Red River and Deadwood formations are emerging as targets for exploration or redevelopment, said David Stone, Marathon Oil director of portfolio and business strategy.

They set up as the next generation step out from the Middle Bakken and upper Three Forks formations, the non-shale reservoirs that produce almost all of North Dakota's oil (see 2011 North Dakota production by formation adjacent to this article or at http://1.usa.gov/IZDAaQ).

2011 North Dakota oil production by formation

Formation	Barrels of Oil Produced	Percent	Wells
BAKKEN	126078474	82.7911	3344
BAKKEN/THREE FORKS	593925	0.3900	10
BIRDBEAR	477553	0.3136	102
CAMBRO/ORDOVICIAN	9583	0.0063	2
DAWSON BAY	11684	0.0077	3
DEVONIAN	594275	0.3902	55
DUPEROW	518723	0.3406	112
GUNTON	611	0.0004	2
HEATH	182522	0.1199	38
LODGEPOLE	937928	0.6159	34
MADISON	8332444	5.4716	2052
MIDALE/NESSON	165525	0.1087	42
MISSION CANYON	1091	0.0007	1
ORDOVICIAN	349328	0.2294	50
RATCLIFFE	8179	0.0054	4
RED RIVER	1382077	0.9076	185
RED RIVER B	9244774	6.0707	272
SANISH	1983172	1.3023	44
SILURIAN	394191	0.2589	48
SPEARFISH	82218	0.0540	26
SPEARFISH/CHARLES	248845	0.1634	97
SPEARFISH/MADISON	58605	0.0385	38
STONEWALL	257839	0.1693	44
THREE FORKS	22610	0.0148	1
TYLER	186099	0.1222	37
TYLER A	21873	0.0144	2
WINNIPEG/DEADWOOD	1360	0.0009	2
WINNIPEGOSIS	139589	0.0917	17
2011 Total	**152285097**	**100.0000**	**6664**

Stone said the key to unlocking them will be to add horizontal wells, long laterals and multistage fracturing to the extensive vertical wells "all through" the play.

"There's a lot to be learned yet," he said. "A lot of these new plays are nothing but redevelopments and field extensions."

see **MORE BLACK GOLD** page 6

LAND & LEASING

BLM lease sale draws $3.9 million in Montana, Dakotas

A recent sale of oil and gas leases on federal lands in Montana, North Dakota and South Dakota brought in $3.9 million in bonus bids from 12 winning bidders.

The average bonus bid per acre was $74.80.

The U.S. Bureau of Land Management said May 9 that 151 parcels offered in the three states received bids in the agency's May 8 auction. All but two of the parcels are in Montana.

The highest single-parcel bid was $238,400 for a 596-acre parcel in Richland County, Montana, by Western Land Services Inc. of Sheridan, Wyo.

The highest per-acre bid, at $2,800, also came on a parcel in Richland County. The rural county along the North Dakota border is located in the heart of the booming Bakken formation oil fields.

The bid on the 41-acre tract was made by TDB Resources L.P. of Salt Lake City, Utah. The total price was $115,011.50.

Harvey Mineral Partners of Dallas, Texas won more than half of the total parcels.

The leases are good for ten years after they are issued.

The other nine winning bidders included:

A.R. Evans & Associates
Billings, Montana

Herco LLC
Billings, Montana

Magnum Producing L.P.
Corpus Christi, Texas

Marathon Oil Company
Houston, Texas

Murfin Drilling Company Inc.
Wichita, Kansas

Nisku Royalty
Billings, Montana

NovaNRG LLC
Sugar Land, Texas

Relentless Energy LLC
Sidney, Montana

Yates Petroleum Corporation
Artesia, New Mexico

—The Associated Press contributed to this story

● LAND & LEASING

Most leased public acreage 'idle'

Department of Interior report finds that 72% of offshore leases and 56 percent of onshore leased currently undeveloped

PETROLEUM NEWS BAKKEN

A considerable majority of the public lands and waters leased for oil and gas development remain idle, according to a report from the U.S. Department of the Interior.

The idle acreage includes onshore leases in the area around the Williston basin.

President Obama called on federal land managers in March 2011 to determine just how much of the public land currently under lease for oil and gas activities is actually in development. The move was an effort to encourage leaseholders to develop existing leases rather than push the administration to open additional lands for development.

The report found that nearly 26 million acres of offshore leases and nearly 21 million acres of onshore leases are currently idle, meaning: "not undergoing exploration, development, or production." That idle area accounts for 72 percent of all offshore leases and 56 percent of all onshore leases. "These lands and waters belong to the American people, and they expect those energy supplies to be developed in a timely and responsible manner and with a fair return to taxpayers," Secretary of the Interior Ken Salazar said in a prepared statement. "We will continue to encourage companies to diligently bring production online quickly and safely on public lands already under lease."

"We will continue to encourage companies to diligently bring production online quickly and safely on public lands already under lease."
—Secretary of the Interior Ken Salazar

Officials in Alaska and the Gulf Coast have argued that the low rate of exploitation on federal leases is largely the result of administrative roadblocks by federal authorities.

The report found that only 44 percent of the leased federal acreage in North Dakota and 25 percent of the leased federal acreage in Montana are currently under development.

Although the majority of the Williston basin is under private lands, the U.S. Bureau of Land Management manages nearly 2 million acres of mineral estate in North Dakota.

While that is only a fraction of the 700 million onshore acres the federal agency manages, it is an increasingly active fraction with leasing, drilling and inspections all on the rise.

The agency holds quarterly lease sales and splits half of the revenue with the state. A July 2011 sale brought in $66 million and a January 2012 sale brought in nearly $36 million.

Over the five past years, drilling applications have increased fivefold and half of that increase came on tribal lands, including a big jump on the Fort Berthold Reservation.

The agency collected more than $3 million in drilling permit fees in fiscal year 2011.

That permitting is leading to drilling, too, according to the agency.

The agency collected more than $318 million in royalties from federal lands and $180 million in royalties from tribal lands in North Dakota in fiscal year 2011. Since 2007, revenues on Fort Berthold increased from less than $1 million to $134 million per year.

The federal government recently revised its onshore leasing policies to establish "a more orderly, open, and environmentally sound process for efficient development of oil and gas resources on public lands," but is also is developing an Advanced Notice of Proposed Rulemaking for "incentives to encourage timely development of unused onshore leases." ●

continued from page 5

INFRASTRUCTURE

ly running at 150,000-200,000 bpd.

HollyFrontier said it runs 52,000 bpd of Bakken crude at its Cheyenne, Wyo., refinery and 135,000 bpd at its El Dorado, Kan., plant.

But a spokesman said there is not enough pipeline capacity to run enough of either Bakken crude or Canadian heavy crudes. ●

Contact Gary Park through publisher@petroleumnews.com

continued from page 5

MORE BLACK GOLD

Among those who have begun probing the middle and lower Three Forks formations, Continental Resources, a Bakken pioneer, has recently disclosed its deeper Three Forks well has initial production of 1,396 barrels of oil equivalent per day.

Below the Three Forks formation, which sits at about 11,000 feet, are Winnipegosis 12,000 feet, Red River 13,000 feet and Deadwood 14,000 feet.

Continental has also explored a stratum above the Upper Bakken known as Lodgepole, where Marathon tested a well that yielded initial rates of 240 bpd.

Mark Williams, senior vice president at Whiting Petroleum, said the industry has currently rated the Bakken's potential at 4 billion to 24 billion barrels of technically recoverable oil and a productive area of 13,100 square miles on 1,280 foot spacing between wells.

Williams said he is comfortable setting the upper range at 10 billion-11 billion barrels applying current technology, rising to 13 billion-14 billion barrels if greater efficiencies can be achieved.

—GARY PARK

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● FINANCE & ECONOMY

The Bakken from five points of view

Magnum Hunter compares its Williston basin economics to Continental, Denbury, Kodiak and GeoResources

By ERIC LIDJI

For Petroleum News Bakken

In April, Magnum Hunter Resources Corp. (NYSE: MHR) announced a $311 million deal to grab more working interest across its Bakken and Three Forks properties in the Williston basin.

Although small, Magnum Hunter operates in three of the most economic liquids-rich unconventional regions in North America: the wet-gas Appalachian basin, the oily Eagle Ford shale and the oily Williston basin in North Dakota, Montana and Saskatchewan.

IRR Chatter

With the goal of becoming a majority oil producer, Magnum Hunter is focusing on the latter two plays this year. The company plans to spend 92 percent of its upstream capital budget in the Williston and Eagle Ford, up from 67 percent during its last budget, and recently added $150 million to its current spending plan, for a total of $325 million.

Magnum Hunter holds some 125,000 net acres in the Williston basin, which wins out for capital this year, but trails the Eagle Ford in economics.

Magnum Hunter plans to spend $170 million drilling 80 gross (34 net) wells in the Williston compared to $130 million drilling 28 gross (14 net) wells in the Eagle Ford.

Magnum Hunter estimates a 43 percent internal rate of return, IRR, in the Williston.

Although that figure covers the entire basin, the company is making different assumptions across the play. For its North Dakota wells, Magnum Hunter estimates an average well cost of $6.9 million and an estimated ultimate recovery, EUR, rate of 350,000 barrels of oil equivalent, while in Saskatchewan it estimates an average well cost of $3.4 million and an estimated ultimate recovery rate of 185,000 barrels of oil equivalent.

The increased cost in North Dakota is largely the result of longer laterals.

By comparison, Magnum Hunter estimates a 54 percent internal rate of return, IRR, in the Eagle Ford based on an average well cost of $9 million and an EUR of 433,000 barrels of oil equivalent. In the liquids-rich Marcellus shale, Magnum Hunter estimates a 33 percent IRR based on an average well cost of $6.5 million and an EUR of 8.2 billion cubic feet of natural gas.

Those figures assume oil prices at $90 per barrel. When prices approach $105 per barrel, the plays become almost even, with IRRs increasing to around 60 percent in both sections of the Williston basin and to around 63 percent in the Eagle Ford, the company said.

Although the Eagle Ford currently beats the Williston within the Magnum Hunter portfolio, Magnum Hunter claims its Williston assets outperform its competition in the region. While its 43 percent IRR trails Kodiak Oil & Gas Corp. (44 percent) it beats Continental Resources Inc. (37 percent), Denbury Resources Inc. (27 percent) and GeoResources Inc. (25 percent), and its well costs are lower than all four companies.

Continental eyeing pads

How do those other companies see the matter?

Continental is a leading player in the Williston basin's Bakken and Three Forks formations, both part of the Bakken hydrocarbon system

The Oklahoma City-based company produced 85,526 barrels of oil equivalent per day during the first quarter, up 66 percent year over year.

In the Bakken system, Continental holds nearly 1 million net acres in North Dakota and Montana and produced 48,024 barrels of oil equivalent in the first quarter, an 88 percent increase year over year.

Continental expects production across

see IRR CHATTER page 9

Magnum Hunter

➢ 2012 upstream capital budget heavily weighted to liquids targets
- Williston Basin: ~34 net wells expected to be drilled in 2012
- Eagle Ford: from ~14 net wells expected to be drilled in 2012

➢ Direct control of the operations and timing on ~69% of the projects identified

($ in millions, unless otherwise specified)

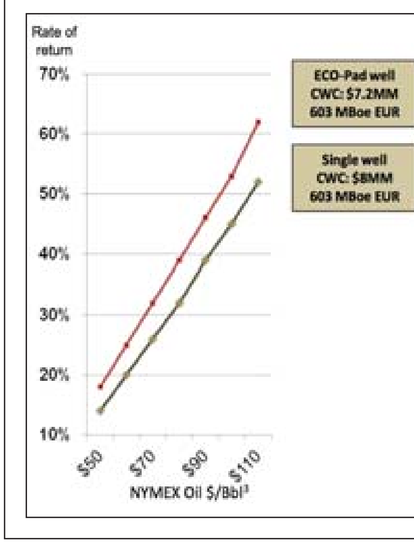
	2012 Wells Planned		2012 Drilling Budget	
	Gross	Net	Total	% Operated
Williston Basin	80	34	$170	42%
Eagle Ford	28	14	$130	75%
Appalachia	5	4	$25	73%
Total Drilling	113	52	$325	58%

($ in millions, unless otherwise specified)

	Well Economics			
	Capex	EUR	NPV-10%	IRR (%)
Williston Basin - ND [1]	$6.9	350 Mboe	$7.5	43%
Williston Basin - SK [2]	$3.4	185 Mboe	$4.1	43%
Eagle Ford [3]	$9.0	433 Mboe	$7.0	54%
Marcellus [4]	$6.5	8.2 Bcf	$5.0	33%

COURTESY MAGNUM HUNTER

Continental



COURTESY CONTINENTAL

Magnum Hunter estimates a 43 percent internal rate of return, IRR, in the Williston. … By comparison, Magnum Hunter estimates a 54 percent IRR … in the Eagle Ford … (and) in the liquids-rich Marcellus shale a 33 percent IRR.

DOWNSTREAM

Capital raised for Louisiana terminal

Petroplex International, a Louisiana-based developer of bulk liquid storage terminals, and an associated investment consortium, said it has raised $600 million for a multi-modal bulk liquid terminal in St. James Parish in Baton Rouge.

The planned initial capacity is targeted at 4-6 million barrels, spurred on by what Petroplex President and Chief Operating Officer Mark Helmke said is a "substantial increase in crude oil production from domestic shale formations and Canadian oil sands (that is) rapidly changing North American product supply flows and requires new infrastructure to accommodate its storage."

He said the St. James region is expected to significantly benefit from new production and crude supply shifts.

"We believe Petroplex is in an ideal location to provide terminal services for the seamless movement and storage of all commercial liquid commodities," Helmke said.

He said the new terminal will be located close to key intermodal infrastructure, waterways, refineries and manufacturers and will provide a "unique storage solution to producers."

Construction is expected to start in the first half of 2013 and the facility is scheduled to start commercial operations during 2014.

Petroplex is the only dedicated independent "for hire" terminal services company serving the St. James market.

The consortium consists of Macquarie Group, Quanta Services and Harley Franco, chief executive officer and founder of Harley Marine Services.

—GARY PARK

Denbury

	EOR	Bakken
	Gulf Coast Model Averages	575,000 BOE / Well $9.6 Million / Well[2] 20% Royalty
NYMEX oil price	$90.00	$90.00
Finding & development cost:		
Field	9.00	21.00
Infrastructure	4.50	---
Total capital per BOE	$13.50	$21.00
Average operating cost over life	25.00	8.00
Average historic NYMEX differentials	1.25	10.00
Estimated gross margin	$50.25	$51.00
Estimated Internal Rate of Return	39%	27%
Return on investment	4.4	2.7

(1) Updated as of 12/31/11
(2) Cost target of long lateral well; Q1 actual cost averaged between $10.5 to $11.0 million

COURTESY DENBURY

continued from page 8

IRR CHATTER

its entire portfolio to grow between 47 and 50 percent this year and to triple between 2009 and 2014, propelled largely by the Bakken.

With oil at $90 per barrel, Continental estimates a 32 percent rate of return for single wells and 39 percent rate of return for pad drilling. Those rates increase to 52 percent and 62 percent respectively when oil hits $110 per barrel. The figures assume an average completed well cost of $8 million for single wells and $7.2 million for pad drilled wells with an EUR rate of 603,000 barrels of oil equivalent for both.

Those returns could improve as Continental becomes more efficient. The company plans to increase its pad drilling in the coming year and claims to have reduced its spud-to-spud cycle time by 30 percent over the past six months. Continental is still railing around half of its Bakken production to market, though, a significant cost increase over pipelines.

Continental also operates in the Woodford formation of Oklahoma and the Niobrara formation of Colorado, but plans to decrease activities in both plays this year.

Bakken versus EOR

Denbury focuses primarily on capturing carbon dioxide and injecting it into older oil fields to improve recovery rates, but with its arrival in the Bakken in recent years, the Texas-based independent is now a fast growing unconventional oil producer as well.

The two approaches involve different financial models. How do they stack up?

With oil prices at $90 per barrel, Denbury estimates a 27 percent IRR for its Bakken properties compared to 39 percent for its average enhanced oil recovery project in the Gulf Coast. The model assumed an average Bakken well cost of around $9.6 million and an estimated ultimate recovery of 575,000 barrels of oil equivalent.

While current oil prices above $100 per barrel could bump Bakken IRRs up to "low 30s," according to CEO Phil Rykhoek, drilling costs are higher than originally anticipated. The Bakken wells Denbury drilled in the first quarter cost between $10.5 million and $11 million each. The company hopes to get that below $10 million soon through pad drilling.

Until recently, Denbury has been drilling single wells to hold acreage in the Bakken. While the company plans to use one rig this year to continue drilling single wells in the Three Forks, its remaining rigs will shift to pad drilling, a more cost effective approach.

Perhaps for that reason, Denbury said it is done acquiring property in the Bakken except for "little add-on pieces." Going forward, "most of the expansion or acquisitions would likely be or almost certainly be (enhanced oil recovery) candidates," Rykhoek said.

To manage increased costs in the Bakken, Denbury recently added $80 million to its capital budget for the play this year, bringing total spending plan to about $480 million.

Denbury is budgeting about $1.5 billion across its portfolio this year.

Denbury produced 15,114 barrels of oil equivalent per day in the Bakken during the first quarter, up 164 percent year over year and 29 percent quarter over quarter. It attributed the increase to improved completion activities and accommodating weather this winter.

Those encouraging results are making Denbury slow down its slow down in the Bakken.

While Denbury originally planned to cut its rig count to three from a 2011 peak of seven, the company is now planning to keep a fourth rig in the play. Why not more? The short answer, Rykhoek said, "is we're just trying to manage our cash flow vis-à-vis debt."

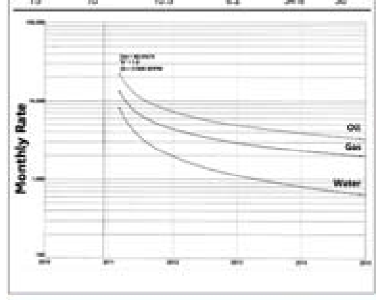
Denbury operates in the Gulf Coast and the Rocky Mountains, and is the largest producer in Mississippi and Montana. The company holds some 200,000 net acres in the Bakken.

Kodiak

Projected long lateral wells with EUR of 650-850 MBO with average $10.5 MM well economics

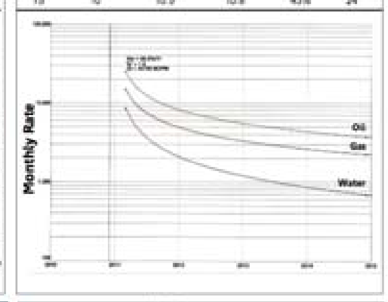
Bakken Long Lateral – 750 MBO

WTI ($/bbl)	Differential ($/bbl)	Well cost midpoint ($ millions)	NPV-10 ($ millions)	IRR	Payout (months)
$95	$10	$10.5	$13.8	54%	20
85	10	10.5	11.0	44%	24
75	10	10.5	8.2	34%	30



Bakken Long Lateral – 850 MBO

WTI ($/bbl)	Differential ($/bbl)	Well cost midpoint ($ millions)	NPV-10 ($ millions)	IRR	Payout (months)
$95	$10	$10.5	$17.0	69%	18
85	10	10.5	13.9	55%	20
75	10	10.5	10.8	43%	24



Bakken Long Lateral – 650 MBO

WTI ($/bbl)	Differential ($/bbl)	Well cost midpoint ($ millions)	NPV-10 ($ millions)	IRR	Payout (months)
$95	$10	$10.5	$10.5	42%	25
85	10	10.5	8.0	33%	31
75	10	10.5	5.7	25%	38

Note: Based on management projections utilizing current cost and differential assumptions.

COURTESY KODIAK

GeoResources

Bakken Resource Potential

Net Resource Potential(1)

	Bakken (Williams, McKenzie, E. Montana)		Bakken (Mountrail County)	
	300 Mboe	450 Mboe	400 Mboe	600 Mboe
Assumed Spacing Unit Size (Acres)	1,280	1,280	1,280	1,280
Estimated # Wells per Spacing Unit (Bakken Only)	4	4	3	3
# Acres per Well (Spacing Unit / # Wells per Unit)	320	320	427	427
Estimated 1/1/12 Remaining Net Undeveloped Acres	43,500	43,500	5,000	5,000
Number of Potential Net Drilling Locations	**136**	**136**	**12**	**12**
Estimated EUR per Well (Mboe)	300	450	400	600
Net Resource Potential (Mboe)	**40,781**	**61,172**	**4,688**	**7,031**

Undeveloped Bakken Acreage Provides Net Resource Potential of ~45 to ~68 MMboe

(1) Data is for illustrative purposes only and is based on management assumptions. Resource potential estimate excludes developed acreage on which proved reserves are already booked. EUR refers to management's internal estimates of reserves potentially recoverable from successful drilling of wells. See Additional Disclosures in Appendix.

11

COURTESY GEORESOURCES

Wide range for Kodiak

Kodiak reports a 44 percent IRR for its average well in the Bakken based on a $10.5 million well cost, but the rate rises and falls with prices and production.

The figure is roughly the midpoint of that range. For wells with an EUR rate of 650,000 barrels of oil, Kodiak estimates a 25 percent IRR when oil prices are $75 per barrel. For wells with an EUR rate of 850,000 barrels of oil, Kodiak estimates a 69 percent IRR when oil prices are $95 per barrel.

The high end is becoming a realistic assumption for Kodiak. In Dunn County, N.D., Kodiak is reporting EURs between 800,000 and 900,000 barrels from long lateral wells.

The rate (in the Bakken) can fall to as low as 8.4 percent when oil is at $70 per barrel and drilling costs average $9 million per well, but can increase to 127.1 percent when oil hits $100 per barrel, drilling costs fall to $8 million and average EUR rates increase to 500,000 barrels.

The Denver-based Kodiak currently holds around 157,000 net acres in the Bakken.

Although focused on the Williston basin of North Dakota and Montana, Kodiak also operates in the Green River basin of Wyoming and the Vermillion basin of Colorado.

Upside in the Eagle Ford

GeoResources also projects a broad range of potential returns.

The Houston-based independent expects to drill between 74 and 97 gross well across its 55,000 net acre leasehold in western North Dakota and eastern Montana in the Bakken.

The 25 percent rate of return Magnum Hunter cited refers to $8 million wells with an EUR rate of 300,000 barrels when oil prices are $90 per barrel.

That rate can fall to as low as 6.8 percent when oil prices are at $70 per barrel, but can increase to as high as 61.9 percent when oil prices are around $100 per barrel, average well costs fall to around $7 million and EUR rates increase to 450,000 barrels of oil.

By comparison, GeoResources reports a 25 percent return for its Eagle Ford wells, assuming $8 million well costs, $90 per barrel oil and an EUR rate of 325,000 barrels.

That range extends to greater peaks than the Bakken, though.

The rate can fall to as low as 8.4 percent when oil is at $70 per barrel and drilling costs average $9 million per well, but can increase to 127.1 percent when oil hits $100 per barrel, drilling costs fall to $8 million and average EUR rates increase to 500,000 barrels. ●

Contact Eric Lidji at ericlidji@mac.com

● FINANCE & ECONOMY

Crescent back in the buying business

Resumes Western Canada acquisitions, takes aim at North Dakota; technology pioneer says still some deal-making opportunities

By GARY PARK
For Petroleum News Bakken


COURTESY CRESCENT POINT ENERGY

Calgary-based Crescent Point Energy, a trailblazer in the use of horizontal drilling and multistage fracturing to commercialize Saskatchewan's tight-oil plays, is working on twin-pronged objectives — continuing additions to its portfolio of resource plays through acquisitions and weighing expansion into North Dakota's Bakken.

Chief Executive Officer Scott Saxberg laid out the strategy on the heels of Crescent Point's announcement that it has reached a deal to take over junior producer Cutpick Energy for C$425 million, ending a year-long lull in its expansion plans after spending about C$2 billion in 2010 while it searched out the right target.

He said the time for deal making is ripening again because of the plunge to decade-low natural gas prices, which are forcing junior producers to unload their oil and liquids holdings to support drilling programs as investors avoid the equity markets.

Saxberg said there are still "a few opportunities" in Crescent Point's core tight oil plays in Western Canada and "we'd obviously like to consolidate over the next six to 12 months."

Cutpick production mainly in Viking play

In addition, he said his company has its eye on prospects in North Dakota to apply its expertise in the Williston basin.

The acquisition of privately held Cutpick, which includes the assumption of C$83 million in net debt, includes about 5,600 barrels of oil equivalent per day weighted about 65 percent to light oil, mainly in the Viking resource play in the Halkirk area of east-central Alberta.

The junior company's proved plus probable reserves are estimated at 20.5 million boe, 12.2 million boe of them proved reserves, more than 300 net Viking drilling locations and tax pools estimated at C$260 million.

Crescent Point said it is paying C$73,036 per producing boe and gaining a proved plus probable reserve life index of 10 years.

The Cutpick price reflects a value of C$6.04 per Cutpick common share based on a five-day weighted trading average price of C$43.13 per Crescent Point share.

Cutpick said it has drilled 103 Viking horizontal wells, with a 100 percent success rate, in the Halkirk Viking fairway.

Incorporation of its assets will boost Crescent Point's Provost area production to 7,500 boe per day from the current 2,000 boe per day, making Provost its third-largest producing area after its Bakken and Lower Shaunavon areas in Saskatchewan.

Sold 900 boe in non-core Alberta assets

Separately, Crescent Point said it completed the sale to a private producer of about 900 boe per day of non-core Alberta assets, 80 percent weighted to natural gas, and almost 13,000 acres of undeveloped land, for a total consideration of C$35 million.

Assuming completion of both transactions, Crescent Point's average daily production this year is expected to reach more than 88,500 boe per day, making it Canada's fifth-largest independent producer. The exit rate for 2012 is targeted at 97,500 boe per day.

Capital spending for this year will also rise by C$50 million to C$1.25 billion, with about C$30 million of the increase expected to be spent on drilling and completions, primarily in the Viking light oil resource play.

The Viking assets complement and consolidate Crescent Point's existing position in the Alberta and Saskatchewan Viking play and, the company said, are consistent with its strategy of acquiring large oil-in-place assets with high-netback oil production and long-term upside through the application of horizontal infill drilling using multistage fracturing stimulation.

The company also believes there is significant waterflood potential it Cutpick's assets.

Saxberg said Crescent Point will have greater flexibility to more equipment and manpower among its Shaunavon, southern Alberta Bakken and Viking areas.

Can do 'pretty much any deal'

AltaCorp Capital analyst Don Rawson said that since Crescent Point shares trade at a premium, its valuation relative to cash flow, production and reserves means it can do "pretty much any deal" it wants.

Although unwilling to speculate on what more assets it might acquire, he would not be surprised to see another deal.

Desjardins Securities analyst Allan Stepa said he expects Crescent Point to remain "very active" on the M&A front as it "continues to leverage its premium valuation to consolidate holdings in its core operating areas."

One of 8 producers active in Exshaw

While concentrating on its most productive prospects, Crescent Point is one of about eight producers active in the Exshaw/Bakken area of southern Alberta, where operators are trying to figure out the best way to drill those rocks.

Jon Noad, the Canadian exploration manager with Murphy Oil, told a Canadian Energy Research Institute conference in late April that about 25 wells have been drilled into the play over the last year at a cost of C$7 million-C$12 million each.

"There's a variety of sediments which you're going to have to try and target with your horizontal well and your fractures to try and produce," he said.

"The jury's still a little bit out about the best way to drill into these rocks," he said, noting that the reason a lot of the wells are non-commercial has nothing to do with the geology, but applies more to what kind of pressure has been applied to break the rocks open, what has been used to hold them open and where the wells have been targeted. ●

Contact Gary Park through publisher@petroleumnews.com

● MEDIA

No 'fat cats' among wealthy landowners

By STEVEN MERRITT

For Petroleum News Bakken

While the North Dakota oil boom has generated a fresh crop of wealthy landowners, those newly minted millionaires don't fit the stereotype of a "fat cat," according to a recent story in Investment News. In fact, they are more likely to remain low-key, with an eye toward helping their neighbors.

"Their grandparents were homesteaders here on not-very-fertile land, and they've scratched to earn every cent. Today, their lives haven't changed and they don't want them to," Greg Gunderson, president and chief executive of Bismarck, N.D.-based Investment Centers of America, told Investment News.

Gunderson said many landowners have used their new-found wealth to support local churches, schools and charities as well as organizations that provide aid to the poor.

"If you didn't know, you would never be able to tell if someone here earns $50,000 or $500,000," Gunderson told Investment News.

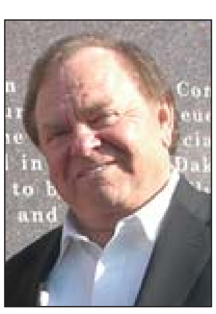
■ Read full story here: http://bit.ly/JLPq8x

Gunderson said many landowners have used their new-found wealth to support local churches, schools and charities as well as organizations that provide aid to the poor. "If you didn't know, you would never be able to tell if someone here earns $50,000 or $500,000," Gunderson told Investment News.

Hamm: State needs to 'shake the negativism'

AS NORTH DAKOTA CONTINUES to process the effects of the Bakken boom, the state needs to "shake the negativism" that has begun to emerge, Continental Resources CEO Harold Hamm recently said in an interview with radio host Scott Hennen.

"We need to stop it, there is no place for it," Hamm said. "There are so many good stories out there it's unreal."



HAROLD HAMM

Hamm told Hennen that a few incidents are being cited and "people are making a big deal out of every one of them," adding that North Dakota needs leadership from all sectors to guide the state through these heady times.

"A few people are providing it (leadership), but everybody needs to get in tune," Hamm told Hennen. "I see a great future for North Dakota."

■ Read full story here: http://bit.ly/Kru5m3

Hotel business reaches new heights

AS ONE MIGHT EXPECT, it is a good time to be in the hotel business in North Dakota.

According to a recent story from Helena, Mont.-based television station KXLH, Bozeman, Mont., developer Andrew Braxton is building a hotel and community center in Williston, N.D., a community that continues to witness phenomenal growth. In the last year alone, according to KXLH, Williston has added 10 hotels, with another half-dozen expected to open this summer.

Even with that exponential increase in rooms, rates are still pricey, with an average night's stay costing around $250, according to KXLH.

■ Read full story here: http://bit.ly/JINEnw

In other news

CBO report: Increased oil production not a sure thing

THE POPULAR REFRAIN that lowering energy costs by increasing domestic production of oil might in fact not be the most effective U.S. policy, according to a story in the International Business Times.

The IBT piece cites a Congressional Budget Office Report released in May on the nation's energy security, which said that promoting greater production of oil in the U.S. would most likely not protect consumers "from sudden worldwide increases in oil prices stemming from supply disruptions elsewhere in the world, even if increased production lowered the world price of oil on an ongoing basis."

According to the IBT, the report takes an opposing stance against the oil industry and Republican presidential hopeful Mitt Romney, among others, who have accused President Barack Obama of pushing regulatory policies that limit energy development as well as curbing oil and gas production on federal lands.

"In fact, such lower prices would encourage greater use of oil, thus making consumers more vulnerable to increases in oil prices," IBT quoted the report as saying, adding the report also noted the U.S. lacks enough spare production capacity to hold in reserve when prices start to climb. Plus, because U.S. oil production is in the hands of private companies, those firms are not likely to withhold oil for a "rainy day" when it could be sold for a profit, according to the report.

On a global scale, the IBT quoted the report as saying that an increase in U.S. oil production might cause other oil-producing countries to curtail their production to keep prices from falling.

The report suggested policies and potential legislation to reduce the U.S. demand for oil as well as releasing oil from the strategic petroleum reserve to offset temporary supply disruptions, according to the IBT. ●

■ Read full story here: http://bit.ly/IWHwXt

● MIDSTREAM & DOWNSTREAM

Seaway solves glut, creates one

By GARY PARK
For Petroleum News Bakken

First crude has entered the reversed Seaway pipeline, relieving 150,000 barrels per day of the squeeze at Cushing, Okla., but as fast as one problem gets help another surfaces.

The Enbridge-Enterprise Products Partners joint venture covers 500 miles to Freeport, Texas.

It is designed to carry more crude from the Permian basin in West Texas and southeast New Mexico and ease congestion at the Cushing hub caused by surging volumes from the Bakken and Canadian oil sands.

But Paul Sankey, an analyst with Deutsche Bank, said in a report May 14 that Seaway will transfer the bottleneck to Midland, Texas.

"With pipeline capacity constraining booming Permian oil supply growth, Midland crude prices have blow out relative to WTI (at Cushing), which itself is already heavily discounted," he wrote, warning that Seaway may well "exacerbate this discount, as it will alleviate oversupply at Cushing, but do nothing for the Midland bottleneck."

The WTI Midland-WTI Cushing price differential was just under $9 per barrel a month ago, the widest in 11 years and on May 14 had shrunk to under $5.50 per barrel.

ENTERPRISE PRODUCTS PARTNERS

Above, workers prepare for the first weld at the Cushing station in March. Below, a section of piple is lowered into place

Paul Sankey, an analyst with Deutsche Bank, said in a report May 14 that Seaway will transfer the bottleneck to Midland, Texas.

Permian production rising

Other analysts say Permian production is rising fast at a time when there is pressure on all options to move crude to new markets.

The U.S. Energy Information Administration reported that from January 2011 to February 2012, the basin's output rocketed upwards by 350,000 barrels per day to 1.6 million bpd and some believe that 2 million bpd is not beyond question.

However, Seaway is expected to soften the differentials between Cushing and Brent-based crudes along the Texas Gulf Coast, which exceed $25 per barrel last year.

The pipeline is also scheduled to offer 400,000 bpd of space by early 2013 and 850,000 bpd by mid-2014.

ENTERPRISE PRODUCTS PARTNERS

Sankey said that based on a Seaway transit time of about 15 days and transport rates of $3-$4 per barrel the early shipments should put "downward pressure" on Louisiana Light Sweet grades, which are currently trading at a $1-$2 per barrel discount to Brent, compared with a $1-$2 premium over the 30 days to May 15.

New takeaway needed

Other analysts argue that the answer to the Midland bottleneck will be the same as that of Cushing — add new takeaway capacity.

Greg Armstrong, chief executive officer of Plains All American Pipeline, told analysts earlier in May that up to $500 million of investment may be needed in the Permian basin to meet pent-up demand.

Seaway's launch was facilitated by the U.S. Federal Energy Regulatory Commission which temporarily accepted the tariffs proposed for shippers, although it said the tariffs were "subject to refund and conditions."

The pipeline proposed an initial per-barrel rate of $3.82 for light crude and $4.32 for heavy crude for uncommitted shippers.

FERC said it wanted a hearing to address issues related to the rates application to be held by June 4. ●

Contact Gary Park through publisher@petroleumnews.com

● GEOLOGY DISCUSSION

Underexplored and untested

But geologists say South Dakota likely does not contain oil bonanza on scale of Bakken's prolific producing zones to the north

By RAY TYSON

Petroleum News Bakken

Folks came to the Black Hills Bakken Conference in Spearfish, S.D., earlier in May, hoping that the experts would confirm widespread speculation that their native South Dakota was on the cusp of an oil boom equal to the one currently under way in neighboring North Dakota.

Answers provided by geologists who addressed the conference and were interviewed separately on the sidelines ranged from not likely to a flat out no. It's really a simple matter of geology. While the giant basin that contains North Dakota's prolific Bakken formation extends down into northwestern South Dakota, the Bakken does not.

"That's why we haven't seen the payoffs and the frenzy and the economic development — the good, the bad and the otherwise — like North Dakota has associated with development of the Bakken," said Derric Iles, a state geologist and head of South Dakota's Geological Survey.

Formations get thinner

Moreover, the few geological formations shared by the two states via the Williston basin thin out and move closer to the earth's surface as they approach the basin's fringes, including northwestern South Dakota. Also, temperature and pressure, which vary according to depth, can greatly affect the composition of hydrocarbon-bearing rocks. So oil from the same formation can be more or less producible when depth is plugged into the equation.

"The basin environment is not in South Dakota; the fringes of the basin are in (northwestern) South Dakota," said Kathy Neset, a contract geologist and owner of Neset Consulting Service Inc. "So that's going to limit the work that's done."

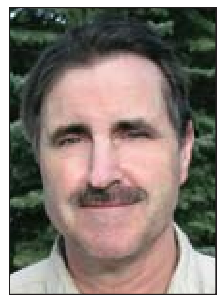
"I don't think there's much for thickness and deposits," added Forrest (Buzz) Skretteberg, a retired oilman who worked for Superior Oil and ExxonMobil during his long career. "The structure is there but it's not the Bakken."

South Dakota does have oil. It produced about 1.6 million barrels in 2010, but only as much as North Dakota had produced in less than four days.

However, this is not to say that South Dakota may not contain significant quantities of oil and gas, or that South Dakota entrepreneurs could not provide support services for North Dakota's booming economy.

"I think South Dakota has definite potential for future development of our oil and gas resources," Iles asserted.


DERRIC ILES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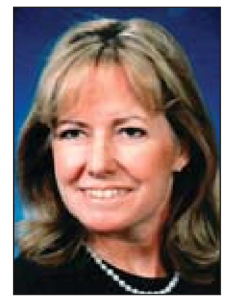
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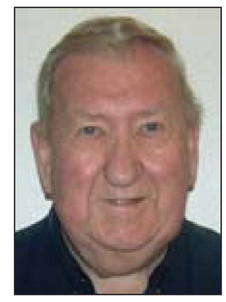
BUZZ SKRETTEBERG

Mapping South Dakota

But the fact South Dakota is said to be largely underexplored, or altogether unexplored, makes it virtually impossible to accurately map the state's oil and gas resources.

The Red River, Tyler and Three Forks formations are of particular interest to geologists. That's because North Dakota produces from all three, while South Dakota produces primarily from the Red River, a deep conventional reservoir discovered in the early 1950s.

Early on producers identified Red River as South Dakota's main pay zone and target for company investment, meaning Tyler and Three Forks rocks drilled through on the way to the Red River, located 8,500-9,000 feet below the earth's surface, were generally discarded and therefore never adequately tested for their hydrocarbon characteristics and potential.

"It's just like going to the doctor's office," Iles said. "It's the same thing with any sort of science. If your testing process is not designed to look for something, you're apt not to find it."

Tyler and Three Forks

The Tyler and Three Forks formations in South Dakota are predominately shale plays, which, if proven to hold commercial quantities of oil, would greatly benefit from the same horizontal drilling and hydraulic fracturing technologies that made it possible to produce from the Bakken formation. None of these technologies is currently being applied in South Dakota.

In fact, Three Forks actually underlies the Bakken on the North Dakota side of the border and extends into South Dakota. Meanwhile, Three Forks is proving to be a prolific producer in North Dakota with rates rivaling the Bakken. And both formations can be accessed from the same surface unit with as many as 10 laterals combined, maximizing production.

Directly above the Three Forks in South Dakota, and at the same level in the rock record as the Bakken in North Dakota, is a formation called the Englewood Limestone. It isn't as thick as the Bakken and the rock composition is different, "but nevertheless you can knock off a chunk with a rock hammer and it smells like crude," Iles noted. "Is there actual potential there? We don't know. We're underexplored."

Shallower yet is the Tyler formation, which encompasses nearly all of western and southwestern North Dakota and unlike Three Forks, extends well into South Dakota.

A North Dakota state official once said the Tyler was most likely one-third to one-half the size of the Bakken in terms of coverage area and oil reserves. The Bakken covers some 25,000 square miles in North Dakota, Montana, Saskatchewan and Manitoba. Officials believe more than 4 billion barrels of oil can be recovered from just the U.S. side of the Bakken using current technology.

Transferring technology

Drilling into the Tyler has been happening in southwest North Dakota since the 1950s using traditional vertical wells. Some 285 Tyler wells have produced about 85 million barrels of oil over the past half-century. Geologists now believe the Tyler, which is located about a half-mile above the Bakken, may share some of its characteristics. So oil companies now want to exploit the Tyler using horizontal drilling and hydraulic fracturing technology learned from the Bakken and Three Forks.

"We think it could be a couple of years before they unlock the secret of drilling the Tyler," Lynn Helms, director of the North Dakota Oil and Gas Division, told the Associated Press. "In our mind, we look at this as the equivalent of Bakken test wells in 2004. Things were very slow in the Bakken play for about two years until they cracked the code."

In South Dakota, the Tyler formation is known as the Minnelusa. More specifically, it's the bottom portion of the Minnelusa that equates with North Dakota's Tyler. "It does cover a huge chunk of our state … but not all of it has a lot of oil and gas for sure," Iles said.

No well has adequately tested the Tyler formation in South Dakota's northwestern quadrant, which geologists believe is the most likely location for a major oil discovery, primarily because of its proximity to producing areas nearby in North Dakota, including the Tyler, as well as Three Forks.

"I don't believe that we have adequate exploration … so I can stand up here and

see **S. DAKOTA GEOLOGY** *page 14*

● FINANCE & ECONOMY

Northern Oil posts record Q1 results

Non-operator more than doubles production, sales and net wells, boosts capital spending and issues $300 million in unsecured debt

By ROSE RAGSDALE

For Petroleum News Bakken

Strong growth propelled Northern Oil and Gas Inc. (NYSE/AMEX: NOG) to set new records in production, oil and gas sales and adjusted operating earnings during the first three months of 2012, reflecting the non-operator's success in increasing its net acreage and more than doubling its net productive wells.

MICHAEL REGER

The Wayzata, Minn.-based oil and gas independent reported net income climbing to $8.8 million, or 14 cents per diluted share during the first quarter of 2012, compared with a net loss of $7.1 million during the comparable period a year earlier.

Northern Oil's production more than doubled, soaring 117 percent to 775,089 barrels of oil equivalent during the three months ended March 31, compared with 356,622 boe during the first quarter of 2011. The output, also up 21 percent from the fourth quarter of 2011, averaged 8,517 boe per day during the first three months of 2012, or about 115 percent more than the 3,962 boe per day produced during the same period a year ago.

Northern Oil's production more than doubled, soaring 117 percent to 775,089 barrels of oil equivalent during the three months ended March 31, compared with 356,622 boe during the first quarter of 2011.

The production growth was driven mainly by a dramatic increase in net producing wells, up 131 percent to 71.8 net wells from 31.0 net wells during the first quarter of 2011.

Sales up 141%

The company's sales of oil, natural gas and natural gas liquids also climbed a record 141 percent in the first quarter compared to comparable sales a year earlier, driven primarily by more output and partially aided by a 16 percent increase in realized prices taking into account the effect of settled derivatives.

Northern Oil's adjusted EBITDA for the first quarter jumped 141 percent to a record $44.8 million, compared with adjusted EBITDA of $18.6 million during the first three months of 2011. The company defines adjusted EBITDA, a non-GAAP measure, as net income or loss before interest expense, income taxes, depreciation, depletion, amortization and accretion, unrealized gain or loss on derivative instruments and non-cash share based compensation expense.

As a result of derivative activities, Northern Oil incurred a net cash settlement loss of $5.3 million in the first quarter, compared with a comparable loss of $3.3 million in the same period a year ago. As a result of forward oil price changes, mark-to-market derivative gains and losses were non-cash losses of $9.4 million in the first quarter, compared with non-cash losses of $21.3 million in the earlier period. Northern Oil's derivatives are accounted for using the mark-to-market accounting method whereby gains and losses from changes in the fair value of derivative instruments are recognized immediately into earnings.

A 'breakthrough' first quarter

Northern Oil President and CEO Michael Reger said the first three months of 2012 was "another breakthrough quarter" for the company.

"The pace of drilling in the Bakken and Three Forks plays continues to accelerate, and our acreage position is turning to production at an increasing rate," Reger said in

see NORTHERN OIL page 15

continued from page 13

S. DAKOTA GEOLOGY

tell you with any degree of confidence that yes we do, or no we don't, or be maybe we do for future development in the Minnelusa," Iles said. "We just don't know enough yet.

Migrating oil

Still, there have been encouraging shows from wells in different counties in western South Dakota that encountered quality oil at much shallower depths than ever expected, indicating the oil probably migrated upward from deeper formations.

"Nobody was more surprised than we were," said Tony Petres, a former South Dakota state geologist and currently president of research firm Inyan Kara Group. "We don't have enough chemical information for a typing study. But most of it is very nice light oil. There's probably a good chance it's Red River oil, or Three Forks."

But there are disagreements. In North Dakota, it's generally agreed that the source rock for Three Forks is the Bakken, while in South Dakota there is a theory that because the Bakken is absent in South Dakota, Three Forks is its own source of oil.

Nevertheless, Petres said companies he has talked with "take great interest" in the fact the various oil shows are shallow (1,500-2,500 feet) and that they evidently originate from shale. For example, Three Forks formation is at only 5,000-5,500 feet.

"That means they can apply technology directly … and that really turns them on," he added. "The shallow stuff is interesting because it is stacked all the way down. … Those units are all oil saturated. But how many of them will be commercial, I don't know."

Leasing in South Dakota

Meanwhile, companies appear to be positioning themselves for exploration in South Dakota. For example, last fall the state's Office of School and Public Lands auctioned off 67,000 acres in oil and gas leases to Bedrock Oil & Gas. Less than two months ago the state leased another 75,000 acres to the same company. All the mineral rights now held by Bedrock are good for five years and scattered across South Dakota in more than 360 parcels of land.

"This group is really banking on the future of South Dakota," Iles said. "My best guess is that they are banking on our Minnelusa or Tyler formation."

Neset said she has talked to four or five companies that are interested in leasing property in South Dakota. "That's what I would expect right now," she said, "and that's going from southwest North Dakota to northwest South Dakota. They are private lands."

North Dakota's success

Iles said that because of the high success rate of Bakken wells in North Dakota, it could take several years — perhaps as long as five years — before exploration gets under way in South Dakota.

"If you are an investor with the $8 million to $10 million that it costs to drill one of those wells, you're going to go to North Dakota, if you can," he said.

"And if you are already in their system, you are going to invest your money there, because you are pretty much guaranteed a payback, as opposed to coming to South Dakota to do some wildcatting. I think we have to wait for things to slow down a little bit in North Dakota, to get those investors to even look seriously at South Dakota. But I think it's inevitable that we're going to see some more exploration in South Dakota." ●

Contact Ray Tyson at raymondtyson@msn.com

Northern Oil and Gas 1st quarter 10-K

CRUDE OIL AND NATURAL GAS PROPERTIES (Details) (USD $) (in Millions)	3 Months Ended 03/31/2012
Lambert Project [Member]	
Aggregate acres of leasehold interest held	11,300
South West Big Sky Project [Member]	
Aggregate acres of leasehold interest held	4,500
Windsor Project Area [Member]	
Aggregate acres of leasehold interest held	2,700
Capital expenditures incurred but not yet paid	$ 107.4
Mineral acres acquired, net (in acres)	10,278
Average Acquisition Cost Per Net Acre	0.001672
Gas and Oil Acreage, Undeveloped, Net Acres	110,000
Anticipated future period over which excluded costs will become subject to depletion (in years)	5 Y
Wells In Process Of Drilling Gross	158
Wells In Process Of Drilling Net	16.5
Amount of capitalized costs excluded from depletion	$ 141.6
Number of defined drilling projects participating with Slawson	3
Aggregate acres of leasehold interest held	18,500

Northern Oil & Gas, Inc.,10-Q, May 07, 2012. Powered by Morningstar® Document Research

Slawson Exploration the exception

In its first quarter Form 10-Q filing with the U.S. Securities and Exchange Commission for the three-month period ending March 31, Northern Oil and Gas Inc. said it "historically" acquires its properties by purchasing individual or small groups of leases directly from mineral owners or from landmen or lease brokers. Such leases have not been subject to specified drilling projects, and by purchasing lease packages in identified project areas they have not been controlled by specific operators.

Northern Oil "generally participates in drilling activities on a heads up basis by electing whether to participate in each well on a well-by-well basis at the time wells are proposed for drilling."

The exception to this rule is three "defined drilling projects with Slawson" Exploration, described by Northern Oil in its SEC filing as follows: "As of March 31, 2012, the Company was participating in three defined drilling projects covering an aggregate of approximately 18,500 net acres of leasehold interests held by the Company. The Windsor project area includes approximately 2,700 net acres held by the Company, primarily located in Mountrail and surrounding counties of North Dakota. The South West Big Sky project includes approximately 4,500 total net acres held by the Company in Richland County, Montana. The Lambert project includes approximately 11,300 net acres held by the Company in Richland and Dawson counties, Montana."

For more information see the adjacent chart which was part of Northern Oil's 10-K filing.

—KAY CASHMAN

PEOPLE

Continental gets new president; Hume moves to strategic growth

A major senior management change is under way at big Bakken producer Continental Resources. Effective June 4, Jeff Hume, the company's president and chief operating officer, will assume the role of vice chairman of strategic growth initiatives; in turn, Rick Bott will replace Hume as president and chief operating officer.

The transition, Oklahoma City-based Continental said in a May 14 press release, reflects the company's "high rate of growth and continued focus on exploration and oil production."

"As we grow the company and add shareholder value, we continue to build out a world-class management team," said Chairman and Chief Executive Officer Harold Hamm. "Jeff and I have worked together for 29 years. He has done an outstanding job as president and has been integral to Continental's success. In his new role, he will provide valuable leadership on issues that have increasing impact on our success as the company rapidly grows in size and scope."


HAROLD HAMM


RICK BOTT


JEFF HUME

Bott most recently served as executive director and chief operating officer of Cairn India Ltd., a publicly listed company and member of the Nifty Fifty of the India National Stock Exchange.

He has more than 27 years of global exploration and production experience leading integrated organizations, developing new business and focusing on cross-cultural leadership development, Continental said in its release.

Earlier, Bott served in Devon Energy's international division, where he was a vice president responsible for developing and implementing exploration strategy.

He was also president of Ocean Egypt Cos. and Ocean Yemen Corp., and held a number of international management and technical positions with British Gas and Tenneco.

"We are thrilled to round out our executive team with someone of Rick Bott's caliber. He is a geologist who shares my passion for oil exploration. His extensive experience will enable Continental to deliver on key company objectives. Cairn India is a world-class leader in oil development, and under his leadership, Cairn India increased oil production from 65,000 barrels of oil per day to 175,000 bopd," Hamm said.

"It has been my good fortune to have worked in a number of companies that have capitalized on the strength of a talented work force, built world-class assets and applied innovative technologies and visionary leadership. I see these same factors coming together at Continental Resources, and I feel privileged to join this cohesive organization with solid financials and am excited about helping to achieve real growth and long-term shareholder value," Bott was quoted as saying the press release.

—PETROLEUM NEWS BAKKEN

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NORTHERN OIL

reporting the company's first-quarter 2012 performance May 7.

"Importantly, we are seeing a broader range of opportunities to acquire strategic, non-operated interests, which we believe will allow us to continue growing our acreage position in a careful and methodical manner," he said. "We are pleased to see the additional efficiencies that are embedded in future wells through the use of pad drilling, which also indicates operators' intentions to capitalize on future down-spacing in these plays. Our capital position remains secure, and we believe we are well positioned to develop and grow our asset base."

Some industry analysts praised the first-quarter results, citing the value of Northern Oil's underlying assets, oil and gas production and impressive growth as confirmation of the independent's position as a strong-performing Bakken-centric oil and gas producer with significant future upside potential. The company's stock closed at about $17.65 May 16 and had a price/earnings ratio of 19.57.

173,000 net acres in Williston

As of March 31, Northern Oil controlled some 173,000 net acres in the Williston basin Bakken and Three Forks plays, having acquired leasehold interests covering an aggregate of about 10,278 net mineral acres in its key prospect areas in the first quarter at an average cost of $1,672 per net acre and an aggregate cost of $17.2 million.

Northern Oil controlled about 90,700 net acres at the end of the first quarter that were either developed, held by production or held by operations, which represented about 52 percent of its total Bakken and Three Forks acreage position. The company controls some 101,000 net acres that are developed, held by production, held by operations or permitted, which represents about 58 percent of its total Bakken and Three Forks position.

Northern Oil participated in 112 gross (12.4 net) wells that were spud and 129 gross (13.9 net) wells that were completed and placed into production during the first quarter. The company also re-

see **NORTHERN OIL** *page 16*

MEDIA

Obama's mulligan on Keystone XL

The Washington Times has an opinion piece in its May 16 edition from Sens. Lisa Murkowski, R-Alaska, and David Vitter, R-Louisiana, calling on U.S. President Obama to seize a rare second chance to do the right thing and approve TransCanada's Keystone XL pipeline project.

Check it out: http://bit.ly/JKpRnf

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NORTHERN OIL

affirmed its previous guidance that it will participate in some 44 net wells to be spud during 2012 or roughly 10 percent more than in 2011.

Northern Oil's developed wells totaled 793 gross (71.8 net) as of March 31, and another 158 gross (16.5 net) Bakken or Three Forks wells were being drilled or awaiting completion.

Bigger capital budget, debt offering

The company spent about $125 million on the drilling and completion of wells and had an average election cost for wells drilling or awaiting completion at quarter end of $8.3 million.

Based on Northern Oil's current understanding of its operating partners' development plans for 2012, the company said it expects capital expenditures in 2012 for drilling and completion of wells to total about $360 million. This estimate represents nearly an 11 percent increase from a previously announced $325 million budget and is primarily due to more pad drilling and a higher concentration of longer lateral wells, which Northern Oil said it believes will provide more favorable production economics and cost savings on future wells.

In addition to drilling capital expenditures, Northern Oil affirms its prior expectation to spend $60 million to $80 million for acreage acquisitions during 2012. The company spent about $17.2 million on acreage acquisitions during the first quarter, and incurred an additional $8.2 million of development costs in return for acreage interests earned through farm-in arrangements.

Separately, Northern Oil also announced a $250 million offering of senior notes due 2020 in a private placement to eligible purchasers. The notes will be general unsecured obligations. On May 15, the company increased the aggregate principal amount of the offering to $300 million and priced the 8 percent senior notes due 2020 at an offering price equal to 100 percent of par.

Northern Oil said it intends to use the net proceeds of about $291.3 million, after deducting initial purchasers' discounts and offering expenses, to repay borrowings outstanding under its revolving credit facility, to fund capital expenditures, and for other general corporate purposes. The offering was expected to close May 18, subject to the satisfaction of customary closing conditions. ●

Contact Rose Ragsdale at roseragsdale@live.com

The Pronghorn used to be called the Sanish and considered part of the upper Three Forks formation, but is now viewed by state of North Dakota geologists as the lowest member of the Bakken formation.

PHOTOS COURTESY KENT HOLLANDS, NORTH DAKOTA GEOLOGICAL SURVEY

From top to bottom: the upper member (shale) of the Bakken formation, the middle member (dolomitic sandstone reservoir); the lower member (shale); and the upper member of the Three Forks formation, which is a tight variable oil reservoir consisting of green and tan, sometime pinkish, carbonate mudstone, as well as shale but with no organic content.. Missing just above the upper Three Forks is a sandstone that used to be called the Sanish, but is now considered one of the Bakken members, with a new name: Pronghorn.

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INSIDER

almost a household phrase in North America and beyond.

And soon it could also be technically correct, thanks largely to the efforts of Slawson Exploration.

Slawson, the third company to drill a horizontal well in the Bakken formation, is successfully producing "some oil" from the Upper Shale Bakken member in three fields — the South West Big Sky project in Montana's Richland county; the Lambert project in Montana's Richland and Dawson counties; and the Squaw Gap field in North Dakota's McKenzie County.

The Montana wells were drilled in 2010-11.

Don't bother checking the North Dakota Department of Minerals website for the list of Bakken Horizontal Wells by Producing Zone (www.dmr.nd.gov/oilgas/bakkenwells.asp) because it's missing three of Slawson's four Upper Bakken horizontal wells in — we assume (Slawson wouldn't confirm) — the Squaw Gap field, all drilled and or completed in 2007-08.

But if you check recent permits issued for new wells, you'll see six new Squaw Gap wells on April 16.

Squaw Gap dates back to the 1980s, possibly earlier, when vertical wells were the norm, but at that point Shell Oil was the operator; prior to Slawson taking over in 2003, it was Headington Oil.

Company Vice President Craig Slawson was the first person to respond to a plea in Petroleum News Bakken's first edition, April 15, 2012, asking for a geology lesson that would explain why the Bakken was referred to as a shale play.

"You are correct that the vast majority of wells target the middle Bakken," he wrote in an email.

In a follow-up interview, he said, "Nobody in their right mind would target, would drill into, the upper or lower Bakken shale," noting, "we aren't right-minded."

Technically savvy Slawson Exploration is "the only company" that has targeted the Upper Bakken using horizontal wells, he said.

And Craig Slawson is almost ready to talk publicly about what Slawson Exploration, a privately held family firm founded by his father, has been doing to entice the Upper Bakken shale to produce oil.

Stay tuned.

—KAY CASHMAN

Contact Kay Cashman at publisher@petroleumnews.com

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STATOIL JOINS

tant part of future energy supplies. Statoil has step by step developed industrial capabilities through early entrance into Marcellus and Eagle Ford. Entering the Bakken and Three Forks tight oil plays and taking on operatorship represents a new significant step for Statoil. We are positioning ourselves as a leading player in the fast growing U.S. onshore oil and gas industry."

Second round targeting middle member

Very early in its development stages, the central Montana tight oil play has been touted as a potential mini-Bakken.

The first round of horizontal wells targeting the Heath formation was drilled in 2010 by Central Montana Resources LLC.

TROND ISAKSEN / STATOIL

HELGE LUND

Cirque started drilling in 2011.

They are only two companies with horizontal Heath wells that have been brought online (all production has to be reported monthly to the Montana Board of Oil and Gas Conservation).

Those reported well results have not been stellar, which is not unusual in the infancy of exploiting a tight oil play. Per Lynn Helms, director of the North Dakota Oil and Gas Division in relation to early drilling in the Tyler formation: "We think it could be a couple of years before they unlock the secret of drilling the Tyler. In our mind, we look at this as the equivalent of Bakken test wells in 2004. Things were very slow in the Bakken play for about two years until they cracked the code."

In the Heath formation, Central Montana Resources' best-of-seven wells, the Snowmane 4 in Petroleum County, yielded just 9 barrels of oil per day in March, up from 7.5 bpd in November, after five months of production.

But Stephen Lipari, chief operating officer of Central Montana Resources, told Petroleum News Bakken May 16 that Heath operators have been very good about sharing information with one another.

Consequently, the first four laterals drilled by Cirque, the second round of laterals to be drilled by Central Montana Resources, and the first four by Fidelity Exploration & Production/MDU Resources target a different member of the Heath formation than Central Montana Resources' first seven wells.

"The Heath is a combination of carbonate and shale layers. We identify them as three main members, A, B and C," Lipari explained.

"Member C, which we targeted, is the shale-rich member."

"B, which Cirque targeted, is carbonate-rich, with more porosity and permeability," similar, Lipari said, to the middle member of the Bakken formation, which is a dolomitic sandstone reservoir — conventional but tight.

The A member is a carbonate-rich rock, too, but tighter than B.

The challenge, he said, is knowing where to position the laterals.

Central Montana Resources, which is based in San Antonio and has an operations office in Billings, is "preparing its 2012 campaign now," Liparia said.

Cirque's pilot wells

To date, Cirque has drilled four wells into the Heath formation in three different counties.

Statoil and Cirque appear to be a strategic fit, as both companies put a premium on technological innovation and advancement.

According to Montana well production records, the best of those wells was the Rock Happy 33-3H-2 in Rosebud County.

In Cirque's report to the Montana Board of Oil and Gas Conservation, in the first 21 days of production in February, the Rock Happy 33-3H-2 well produced a total of 2,594 barrels of oil for a daily rate of about 124 bpd (API No. 25087217300000, lease 8496, Wildcat Rosebud, N field, located at 11N-32E, Sec. 33).

Cirque declared an earlier well in the same field a dry hole. In its six days of production in January, Rock Happy 33-3H yielded 1,003 barrels of oil, for a rate of about 167 bpd (API No. 25087217270000, lease 8481).

As of May 16, Cirque had not recorded any production from the Lucky Strike 10-4H in Garfield County (API No. 25033211620000, located at 13N-32E, Sec. 10).

The company's first well in the Heath, Hit Parade 31-3H in Musselshell County, produced 146 total barrels of oil in its first three days of production in December, or about 49 bpd. In January it yielded 515 barrels of oil over eight days, or about 64 bpd. In a 21-day period in February the well produced 853 barrels of oil for an average of 41 bpd (API No. 25065218830000, lease 8480, Wildcat Musselshell field, located at 11N-30E, Sec. 31).

Statoil, Cirque good match

Statoil and Cirque appear to be a strategic fit, as both companies put a premium on technological innovation and advancement.

Dea once described his firm as "very nimble."

In a 2010 interview after he was named Wildcatter of the Year, Dea said, "We have a small staff, but on an individual basis, I would put our people up against the top technical companies. We certainly execute, and we have been amongst the leaders in recognizing the potential in the oil resource plays by leasing up nearly 900,000 acres in the last three years. We are ahead of the game in a lot of these plays."

But Dea is more than an innovative geologist and good team leaders.

He's also a savvy chief executive.

In announcing Dea had won the prestigious wildcatter award, IPAMS (now Western Energy Alliance) put the work history of Cirque's founder in a more telling light.

In addition to praising Dea and his wife Cathy as incredibly committed to science, conservation and education, the organization said:

"Dea graduated with a B.A. degree in Geology from Western State College of Colorado in 1976 and earned a M.S. degree in Geology at University of Montana in 1981. He attended the Harvard Business School Advanced Management Program in 1999."

"After 10 years at Exxon Company USA, Dea joined Barrett Resources in 1993. At Barrett, Dea played a direct role in the discovery of Cave Gulch field (shallow and deep reservoirs) and in the merger with Plains Petroleum Corporation. He also led the company into the Powder River and Raton Basin CBM plays."

"As CEO of Barrett, he negotiated the sales transaction to Williams in 2001, after Shell initiated a hostile takeover, realizing a 67 percent premium to the pre-Shell trading price."

COURTESY STATOIL

Statoil/Brigham operation in the Williston basin.

"During his tenure at Barrett the company's enterprise value grew from $200 million to $2.8 billion, and the Wall Street Journal recognized Barrett as delivering the best 10-year average compounded annual return to shareholders among 33 major and independent oil and gas companies."

"While CEO at Western Gas Resources, the company's value more than quintupled from $1 billion to $5.3 billion with its sale to Anadarko realizing a 49 percent premium to the pre-announcement share price."

"Under Dea's leadership, Forbes listed Western Gas Resources in their Best Managed Companies in America edition, for 5-year annualized returns of 30 percent."

"Business Week ranked WGR as the 23rd best performing company in Standard & Poor's Mid-Cap 400 Index and WGR also became a Fortune 500 company." ●

Editor's note: Cabot Oil & Gas completed the Garnet 1-27H well in late April. Fidelity Exploration & Production/MDU Resources completed the Schmidt 44-27H in first quarter. Both wells were in Rosebud County and both laterals were drilled into the Heath formation.

Contact Kay Cashman at publisher@petroleumnews.com

● ASSOCIATIONS & EVENTS

Bismarck booked for big oil conference, expo

All rooms booked within 100 miles; expected to top previous biggest event to come to Bismarck, a 1979 women's bowling tournament

By JAMES MACPHERSON
The Associated Press

By May 12, restaurants, rental cars and hotels were already booked and Bismarck, N.D.'s airport was expecting an impressive fleet of oil company-owned business jets to crowd the tarmac for the three-day North Dakota oil conference and expo starting May 22.

Officials believe the Williston Basin Petroleum Conference and Expo, spotlighting North Dakota's prosperous oil industry, is bringing the biggest influx of visitors to the state's capital city since a professional bowling tournament rolled into town more than 30 years ago.

Set for May 22-24 at the Bismarck Civic Center, the event is the biggest ever scheduled in Bismarck, and is expected to inject about $1.7 million into the city and neighboring Mandan, said Sheri Grossman, Bismarck-Mandan

Convention and Visitors Bureau's director of sales.

"We're really excited," Grossman said. "It's really a nice way to showcase Bismarck and Mandan, as well as the entire state."

Ron Ness, president of the North Dakota Petroleum Council, said some 4,000 people are expected to attend the conference. People are coming in from more than 40 states and countries as far away as France, Norway and Nigeria, he said.

The expo will feature some 70 speakers, from politicians to top oil company executives, and industry-specific seminars. Officials from Montana and South Dakota, and from the Canadian provinces of Saskatchewan and .Manitoba, are slated to give updates on oil activity in those areas, which border North Dakota.

Started in 1993, the conference and expo is sponsored by Ness' group, the state Department of Mineral Resources and the Saskatchewan Ministry of Energy and Resources.

The event has alternated in recent years between locations in North Dakota and Canada. It was last held in Bismarck two years ago when about 2,750 attended the event.

Ron Ness, president of the North Dakota Petroleum Council, said … people are coming in from more than 40 states and countries as far away as France, Norway and Nigeria.

Ness said the 300 booths that were available this year sold out within minutes of going online in February.

Airport will be crowded with private jets

Grossman said all 2,500 hotel rooms in Bismarck and Mandan have been booked, as have rooms in most communities within a 100-mile radius of Bismarck.

"We're sharing the love," she said.

Dozens of dormitory rooms also are being used to house expo-goers at Bismarck State College and at the University of Mary in Bismarck.

The Pirogue Grille, an upscale 70-seat eatery in downtown Bismarck, normally is closed on Mondays. But owner and Chef Stuart Tracy said he'll open the restaurant on the Monday preceding the expo, which begins on a Tuesday.

"Some people will be arriving early and looking for option and we'd like to be one of those options," Tracy said. "For us, it's almost a no-brainer to have a chance to grab some of that revenue stream."

Bismarck airport manager Greg Haug said the airport will be busy.

"Pretty much everything is sold out, from rental cars to seats on airplanes," he said. "Everything is full."

The airport also is expected to be crowded with private business jets, Haug said.

"We'll see a lot of expensive, heavy iron on the ramp over the days of the conference," he said.

Expected to top the bowlers

Haug and Grossman, of the convention and visitors bureau, said the previous biggest event to come to Bismarck was a women's professional bowling tournament in 1979. That event, which lasted several weeks and drew thousands of bowlers and fans, is expected to be bested by the oil conference and expo in just three days.

The 20th annual conference drew only a few hundred attendees until just a few years ago. The event has grown with the explosion of activity in North Dakota's oil patch, which lies within the Williston basin, a 134,000 square-mile-area that includes the Dakotas, Montana and the Canadian provinces of Saskatchewan and Manitoba.

The gem of the basin is the Bakken petroleum system that encompasses some 25,000 square miles within the Williston basin, about two-thirds of which is in western North Dakota. The oil is trapped in a thin layer of dense rock nearly two miles beneath the surface.

The U.S. Geological Survey has called the Bakken formation it the largest continuous oil accumulation it has ever assessed.

North Dakota was the ninth-largest oil-producing state in 2006, but has risen to No.3. The state is expected to surpass Alaska within a year, trailing only Texas. ●

● PEOPLE

Lynn Peterson: Steady hand at helm

Colorado businessman guides Denver-based Kodiak Oil & Gas Corp.'s quest to capitalize on oil-rich land acquisitions in the Bakken

By ROSE RAGSDALE

For Petroleum News Bakken

When Kodiak Oil & Gas Corp. sailed into the Williston basin of North Dakota and Montana in 2004, it was a small independent hoping to cash in on the rich promise of the region. During the ensuing eight years, the company has grown rapidly from a pure explorer of the Bakken with a $6 million annual budget in 2005 into an aggressive producer targeting 2012 capital expenditures of $585 million. In many ways, Kodiak's rise mirrors the tsunami of exploration and production activity that has engulfed the Bakken/Three Forks/Sanish Play.

COURTESY KODIAK OIL & GAS CORP.

Much of Kodiak Oil & Gas Corp.'s 155,000-acre land position is situated in the deepest and most over-pressured part of the Williston basin of North Dakota.

Who's Who

Today, Denver-based Kodiak is an impressive petroleum producer in the Bakken, boasting dramatic recent growth in reserves, production, cash flow and prospects. The company's success is due in no small measure to a steady hand at the helm, that of Kodiak Chairman and CEO Lynn A. Peterson.

LYNN PETERSON

A certified public accountant educated at the University of Northern Colorado, Peterson, 57, has more than 25 years of experience in the oil and gas industry. He became a director of Kodiak in November 2001, and was appointed top executive of the company in 2002. Before that, Peterson was an owner of CP Resources LLC, an independent oil and natural gas company, from 1986 to 2001. He also served as treasurer of Deca Energy from 1981 to 1986 and previously worked for Ernst and Whinney.

A 'team mentality'

"The key to our success is directly related to our people," Peterson told Petroleum New Bakken in an email May 17. "The geologist defined the play early and the land group successfully negotiated the rights to the lands. Once this was in place our engineering staff has done a commendable job of drilling and completing wells. Clearly none of this would have happened without the contributions of the finance department that put funding in place for all of this to transpire. We have focused our acreage and activity in the deep, over-pressured part of the play where we continue to develop robust wells."

The CEO said everything done at Kodiak is done with a team mentality. "We all try to work together and are willing to take chances when we deem the risks appropriate. I've been fortunate to surround myself with a very capable staff. … We have managed our growth with a conservative balance sheet, which has allowed us to push our operations forward without taking on an excessive amount of debt."

Observers agree, saying much of Kodiak's recent success stems from the hard-charging and focused approach of Peterson and Kodiak's management team and their ability to rapidly expand the company's operations within the heart of the Bakken.

"Lynn and his team at Kodiak have done a fantastic job developing the Bakken in North Dakota," said Ron Ness, president of the North Dakota Petroleum Council.

Certainly, Peterson's annual compensation, which has steadily increased in recent years, reflects the company's satisfaction with his performance. In 2011, the CEO's risk-based compensation totaled $1.4 million, of which $455,000 was comprised of salary and bonus incentive award.

Stellar growth, strong promise

Kodiak grew production 211 percent and oil and gas sales 287 percent in 2011, with the company racking up oil and gas sales of $120 million in 2011. Proven oil reserves climbed 255 percent in 2011 to 35.6 million barrels of oil equivalent, and the company drilled 25 net new wells and acquired 88,000 new acres that included 25 net productive wells.

Between mid-October and January, Kodiak brought on line eight gross operated wells averaging 1,682 barrels of oil equivalent per day. Kodiak currently has a working interest in five non-operated wells in Dunn County that have been completed. In addition, thanks to a second large land acquisition in recent months, the company averaged 12,500 boe per day in sales volumes in March, up from 10,100 boe at the end of 2011.

Kodiak reported average sales volumes of 10,578 boe per day for the first quarter 2012. This represents a 467 percent increase over average sales volumes of 1,864 boe for the first quarter 2011 and a 47 percent increase over fourth quarter 2011 sales volumes of 7,195 boe. The company reported average daily sales volumes of 3,922 boe per day for 2011, representing a 204 percent increase over average daily sales volumes of 1,290 boe during 2010.Crude oil accounted for 91 percent of first-quarter 2012 sales volumes, down slightly from 94 percent of fourth-quarter sales volumes and is a result of more natural gas being captured as sales.

Rig count up

Earlier this year, the plain-spoken Peterson said, "As we have increased our rig count from two operated rigs in early 2011 to six operated rigs currently, we anticipate that 2012 should be another year of robust growth in all areas. Because management plans to bring on 51 net wells this year, it is targeting an exit rate of 27,000 barrels of oil equivalent per day."

In order to eliminate limited leasehold expiration issues, Peterson's team aims to have Kodiak's 155,000 net-acre Williston basin land position held by production by mid-2013.

To wit: Kodiak has more than doubled its planned 2012 capital expenditures to $585 million and set aside $25 million for investments in infrastructure. The company expects to drill 73 gross new wells in 2012 (51 net) and is adding a seventh rig to operations during the second quarter. It has contracted for a second completion crew on an as-needed basis to back up the full-time 24/7 completion crew from Halliburton it already has in place.

Working out the kinks

Analysts say 2012 could be the start of a banner three-year run for Kodiak, based on projections and management's full-steam-ahead approach.

Achieving the company's goals, however, will require Peterson and his team to juggle a variety of issues and meet a host of unexpected challenges as they pop up.

During the first quarter of 2012, for example, Kodiak focused on integrating the October 2011 and January 2012 acquisitions into its operations. A shortage of workover rigs early on led to delays while installing artificial lift on some of Kodiak's wells. The result was production from these wells did not come online until mid-February. The company also substantially completed a number of wellbores gained in the acquisitions that required additional completion procedures to bring the wells to production.

Kodiak also completed three wells in its Grizzly project area which met internal well performance expectations. This area in southwest McKenzie County is characterized by lower reservoir pressures which do not yield the robust initial production rates common in other parts of the basin. The wells are being placed on artificial lift.

In addition, Kodiak continued repair and remediation work on the wells that encountered mechanical issues during completion procedures at the end of 2011 and in early 2012. The company is working on optimizing wellbore density and will continue to test the concept.

"The operations team is working closely with our service providers and with our industry partners that have experienced similar problems. This collaborative effort is yielding solutions that we believe will allow Kodiak and our industry partners to effectively remediate the wells. …We believe we have put this situation behind us as we are now using mostly cemented liners," Peterson told analysts May 4. "However, we now antic-

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FINANCE & ECONOMY

Record production eases Voyager losses

Record oil production and revenues helped Voyager Oil & Gas Inc. sharply decrease its losses year over year, but the company still failed to turn a profit in the first quarter.

The Billings, Mont.-based independent reported a net loss of $256,370 during the first quarter, down from a net loss of $889,774 in the first quarter of 2011. The company also reported adjusted quarterly earnings before interest, taxes, depreciation and amortization (EBITDA) of $3.48 million, up from $271,476 during the first quarter of 2011.

Voyager produced 56,865 net barrels of oil equivalent during the quarter, up 554 percent year over year and 56 percent quarter over quarter, on the back of increased activity.

Voyager is currently participating in 160 gross (7.05 net) wells in the Williston basin, up from 46 gross (1.72 net) wells through the end of the first quarter of 2011. Of those gross wells, 118 gross are currently online and another 42 are drilling or awaiting completion.

Because of that additional activity, Voyager reported oil and natural gas sales of more than $5 million during the quarter, up from $832,621 during the first quarter of 2011.

Voyager is partnering on wells operated by more than two dozen companies, including Marathon Oil Co., Hess Corp., EOG Resources Inc. and Denbury Resources Inc.

The company holds around 33,000 net acres in the Bakken and Three Forks of North Dakota and Montana, as well as acreage in the Niobrara and several plays in Montana.

—ERIC LIDJI

● FINANCE & ECONOMY

Oasis earns $16.4M in first quarter

Year over year turnaround based sharp increase in production and falling cycle times; company budgeting $758 million for 2012

By ERIC LIDJI

For Petroleum News Bakken

A sharp jump in production helped Oasis Petroleum Inc. turn a profit in the first quarter.

The Houston independent reported net income of $16.4 million from the first quarter, up from a loss of $6.8 million year over year and a loss of $13.4 million quarter over quarter.

Oasis produced 17,633 barrels of oil equivalent per day during the quarter — up 118 percent year over year and up 16 percent quarter over quarter — beating the high end of its guidance for the quarter by 7 percent. The company now expects production to grow to between 18,000 and 19,500 barrels of oil equivalent per day during the second quarter.

Oasis completed and brought 26 gross (19.9 net) wells online in the Bakken during the quarter and was drilling another seven gross (five net) wells at the end of the quarter. The company plans to run 10 rigs in the Williston basin through the remainder of the year, eight in the West Williston area that straddles the North Dakota-Montana state line and two in the East Nesson area in Mountrail and Burke counties in western North Dakota.

"We exited the quarter with momentum, as we continue to improve rig efficiency and frac times," Chairman and CEO Thomas B. Nusz said in a prepared statement.

Lease operating expenses down

Lease operating expenses in the first quarter fell 21 percent to $6.12 per barrel of oil equivalent year over year, primarily because of reduced produced water handling costs, and spud-to-spud cycle times fell to 23 days on average (and a low of 18 days) in the first quarter, down from an average of 27 days in 2011 and 29 days in 2010. Oasis is spending between $9.2 million and $10 million per well depending on completion techniques.

"Price differentials for Bakken crude were volatile again in the first quarter of 2012, but Oasis Petroleum Marketing did a great job moving oil and transitioning our takeaway to a mix of about 50 percent rail and 50 percent pipeline," Nusz said. "Differentials have also improved dramatically from the widest levels experienced in February 2012." The company attributed that improvement to "lower quoted prices for Bakken crude in markets such as Clearbrook, MN, and Guernsey, WY, as a result of increased production from the Williston Basin and from Canada and temporary refinery constraints."

Oasis plans to spend $758 million this year drilling 192 gross (80 net wells). ●

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WHO'S WHO

ipate the wells coming on line during the last three quarters of 2012, as opposed to the first half of 2012, as initially expected."

The company's current guidance to the Street is average daily production of 17,000-21,000 boe, and it expects to exit the year on Dec. 31 producing 27,000 boe, signifying robust growth.

Availability of services improving

Peterson said the availability of Williston basin oilfield services continues to improve, which should result in better field-level efficiencies in the coming months and lower well costs.

"We're certainly seeing it from a trucking and pipe standpoint. One of the items we're hoping will start working its way down is the pressure pumping side of the business. As we look down the road 12 months from now, I'm willing to say that I think some of these costs will start to come down," he said.

Averaging $10.5 million per well, Kodiak's well costs tend to be on the higher end of the spectrum, but Kodiak is "chasing the reserves," he said.

Most of Kodiak's acreage is situated in the deepest and most over-pressured part of the Williston basin, primarily in McKenzie, Dunn and southern Williams counties.

"That's where we're seeing the largest reserves. So Kodiak's attention is focused right around the core of our leasehold where we can drill high working interest wells for the remainder of 2012," he said.

COURTESY KODIAK OIL & GAS CORP.

Kodiak Oil & Gas Corp more than doubled its planned 2012 capital expenditures to $585 million and set aside $25 million for investments in infrastructure. The company expects to drill 73 gross new wells in 2012 (51 net) in the heart of the Bakken play.

"We believe the bulk of our acreage will deliver 750,000 to 1 million barrels EUR, so you can see that even with the $10.5 million-$11 million in well costs, we're getting some pretty robust rates of return here," he told analysts May 10.

Peterson also said he expects the company to achieve more internal cost savings as it moves more into development mode, drilling more wells per pad.

"We know we're out of the gates a little slow (this year), but we're excited about what we've got going on. The company is solid financially with plenty of runway ahead of us to grow," he said. "We believe we have a 10- to 12-year inventory ahead of us, somewhere around 800 net (1,100 to 1,200 gross) locations remaining to drill with 70-80 percent average working interest." ●

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PIPELINE RELIEF

Petroleum Producers, which represents the line's largest shippers.

The filing included plans to replace up to 160 miles of existing pipeline in Michigan and 50 miles of line in Indiana as part of Enbridge's plan to retire existing pipe from a mid-2010 incident when a rupture spilled more than 20,000 barrels of crude into the Michigan river system and shut the line for more than two months.

Following the rupture, regulators ordered Enbridge to reduce pressure on the line to 231,000 bpd from 280,000 bpd.

The proposal involves laying new pipe alongside the existing line to end severe rationing of space on Line 6B and help avert a potential bottleneck stemming from the increase in oil sands and Bakken production.

Enbridge said the project has backing from eight refineries served by the line, along with the Canadian Association of Petroleum Producers, which represents the line's largest shippers.

The scheduled in-service date is September 2013.

—GARY PARK

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PRODUCER RANKING

vious year's mark by nearly 40 million barrels, according to the North Dakota Industrial Commission. The number of wells in the state jumped from 6,726 in February to a record 6,921 in March, Hicks said.

North Dakota owes its rapid rise from No. 9 just six years to improved horizontal drilling and completion techniques in the rich Bakken and Three Forks tight oil reservoirs in the western part of the state.

"No. 2, who would have thought?" said Ron Ness, president of the North Dakota Petroleum Council, which represents several hundred companies working in the state's oil patch.

"In 1999, we had zero rigs working and people left this industry for dead in North Dakota. Technology, geology, price and the business climate changed that."

Ness and Hicks said the achievement is bittersweet, as North Dakota continues to surpass states that have seen a decrease in oil production, including California and Louisiana.

"It's unfortunate the way we overtook them," Hicks said. "We need to get domestic production up so we can wean ourselves from foreign oil."

Boom sent population levels sky-high

North Dakota's oil boom also has pushed the state's population to record levels and its unemployment rate the lowest in the nation.

"This is more than oil — it's opportunity," Ness said. "We want these other states moving in the right direction, too. This nation needs to look at energy development. Federal regulatory policies have an impact."

Alaska, which pumped 17.5 million barrels in March, has seen its oil production slip by about 15 million barrels a year since 2008, Alaska Oil and Gas Conservation statistician Steve McMains said. The state expects to tally fewer than 200 million barrels this year. Alaska produced a record 738.5 million barrels in 1988.

North Dakota and Alaska each contributed to about 9 percent of the 178.1 million barrels of U.S. production in February, according to the Energy Department's information administration. Those states in February, along with No. 1 Texas and No. 4 California, contributed to about 45.7 percent of total U.S. production, excluding off-shore drilling, records show.

North Dakota crude was fetching about $93.30 a barrel on May 15, about $3 less than one year ago. Records show 210 rigs were drilling on Tuesday in the state.

Alaska North Slope crude was fetching $111.13 on the West Coast May 15.

Have to double output to beat Texas

To shake Texas from the top spot, North Dakota would have to nearly double its production. The most recent production numbers from Texas show it produced 1.1 million barrels daily in February and 32.9 million barrels for the whole month. And Texas' oil production has increased more than 8.2 million barrels from February 2011 to February 2012, records show.

"It's going to be tough to catch someone who also is inclining," Hicks said. "There are people out there who say we (North Dakota) could hit a million barrels a day, but it's way too early to say."

Natural gas, a byproduct of oil production in North Dakota, also was pegged at a record 620.8 million cubic feet in March — but about a third of it is being flared because the state lacks collecting systems and pipelines needed to move it to market. Less than 1 percent of natural gas is flared from oil fields nationwide, according to the Energy Information Administration in Washington, D.C.

Officials say about $3 billion in infrastructure improvements are planned in the state to process natural gas and move it to market.

—JAMES MACPHERSON, ASSOCIATED PRESS

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FRACK SAND

of the rock.

It's no secret that South Dakota has huge sand deposits associated with the Ogallala aquifer in the southern part of the state, as well as in the Fox Hill sandstone area in northwestern South Dakota, which abuts the North Dakota border.

Suitability is unknown

"So those are two units that we will look at for sure." Iles said. "But whether or not it (South Dakota sand) is suitable, I have no idea."

Especially coveted is silica-based sand, pure white quartz sands of the upper U.S. Midwest, which are hard enough to withstand intense pressure and round enough to let oil and gas escape horizontal wells. Most of the sand comes from mines in the Wisconsin-Minnesota area.

There is said to be a huge — and growing — shortage of high-quality silica sand. Reportedly, the price for commercial silica has gone up an average of 9 percent since 2000, with an acceleration to double digits in the last year or so. This increased demand from drillers in turn has led to a race among sand mining companies to expand their operations.

In fact, an inquiry regarding South Dakota's sand potential from a company that supplies frack sand out of Wisconsin is what sparked Iles' interest in doing the study. By late 2011, Wisconsin alone had 31 sand processing plants planned or in operation, rising from 18 as recently as last August.

Potential mining

"There's been no formal study, no comprehensive look at … all of our possibilities in South Dakota," Iles said. "So what the Geological Survey program … is going to be doing is to begin to look at the surface and near surface sands that might hold some potential for being mined and used for the hydraulic fracturing process."

However, the study will not cover other "proppants" used in hydraulic fracturing, such as manufactured ceramic beads or resin-coated sand," Iles said, adding: "It will be just the sand — easily attainable type sand."

There is no market for frack sand in South Dakota, simply because currently there is no hydraulic fracturing in the state. Therefore, because of its proximity and booming oil economy, North Dakota would be the primary market for South Dakota frack sand, Iles said.

"Certainly the customer — the one with the most clout in the room right now — is the oil industry in North Dakota," he added.

In 2010, U.S. frack sand production doubled to 13 million tons as drilling activity increased and new mines opened. Hydraulic fracturing consumed about 40 percent of U.S. industrial sand output last year, up from 27 percent in 2009, according to the U.S. Geological Survey.

Demand soaring

Demand for fracking sand soared even more in 2011. Oilfield market research firm Spears & Associates reported it was about 22 million tons. Each drilling job can swallow up to 10 million pounds of sand.

One report predicts that the overall fracking sand market will grow about 16 percent annually to $5.1 billion in 2015. U.S. and Canadian demand for the specialty sand will grow 15 percent a year to $1.9 billion in 2015.

Moreover, while consumption has grown, the number of sand companies has quintupled in the past five years to about 25. The largest include Unimin, Fairmount Minerals and Badger Mining.

"I think the Wisconsin company was simply looking at what might be available to develop in South Dakota," Iles said. "But certainly there are South Dakota firms that would be equally qualified to develop that resource as well."

Boots on the ground

As far as the sand study goes, Iles said that "over the coming year we are going to be looking at this. That means boots on the ground, and we will actually be looking at the resource and its potential."

He said the study will be conducted by the state Geological Survey program in the South Dakota Department of Environment and Natural Resources.

"It's a little late in the game right now to actually get people into the field this summer; but for certain, next summer," Iles said. "The fall is also a nice time to be out in the field." ●

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Oil Patch Bits

Totem Equipment & Supply exclusive to ND dealer


COURTESY TOTEM EQUIPMENT

Totem Equipment and Supply said May 9 that it announces the appointment of Four Seasons Equipment of North Dakota LLC as the exclusive dealer for the Totem line of heaters. Four Seasons will stock the well known indirect fired self-contained 1 million Btu Totem 10 at their facility in Williston. In addition the new Totem5CDLT heater and light tower combination will be available. All the equipment will be available for rental or purchase with spare parts and warranty work located on site.

For more information visit www.toteminc.com.

COURTESY TWESTON

Weston Solutions finds unique solution for ND office

Weston Solutions said May 11 that when it sought an office location in Dickinson, N.D., an area of rapid growth, it found the downside of that growth— a severe housing shortage. But for Weston, a firm predicated on solving complex challenges, it considered an innovative solution few firms might consider and purchased the former Hartfiel Inn Bed and Breakfast on 3rd Avenue West.

Weston is retrofitting the 4,800-square-foot fully furnished inn, built in 1912, to be its regional office and will be using the four bedrooms and six bathrooms the 100-year-old inn features for both local staff members and out-of-town visitors from other Weston offices.

"We're excited to have a real 'home' here in Dickinson," said Matt McCue, client service manager, Weston. "Unlike many firms, we're here for the long-term. This is our permanent residence and we're excited. We've met a lot of phenomenal people already and we're looking forward to meeting even more. In fact, as soon as we're settled, we'll be hosting a community partnering and volunteerism event so we can get to know our neighbors even better."

Weston Solutions Inc. is a global leader in environmental solutions, sustainable development, design and build construction, green buildings and clean energy. For more information visit www.westonsolutions.com.

Companies involved in the Bakken, Three Forks and related plays

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PIPELINE SCRAMBLE

And both are attracting interest in their plans to ship crude to refineries in Eastern Canada and relieve a crude bottleneck at Cushing, Okla.

Mark Hurley, Enbridge's senior vice president, crude oil and offshore, said two-thirds of the 150,000 bpd is committed at "walk-up" rates of $3.82 per barrel for lighter crudes and $4.32 for heavier crudes. For long-term contracts shippers will pay $2.75-$3.25 per barrel.

By mid-2014 Enbridge also expects to have upsized its Flanagan South pipeline combined with its existing Spearhead system to 775,000 bpd.

How much from Bakken unknown

Both companies say they will draw volumes from the Bakken, although neither can say exactly how much.

Enbridge Chief Executive Officer Pat Daniel said that data is not available because shippers "don't tell us what they're doing."

If it can survive a fresh round of contentious debate and if President Barack Obama gets re-elected in November, TransCanada expects its rerouted Keystone XL line will offer 830,000 bpd of capacity by late 2014 or early 2015.

To date 500,000 bpd oil sands in XL

So far, shippers have entered long-term contracts to move more than 500,000 bpd of Alberta oil sands crude in XL.

TransCanada said it also has subscriptions for another 65,000 bpd of the 100,000 bpd reserved for the Bakken Marketlink, allowing Williston basin crude from Montana and North Dakota to flow into the system.

The U.S. State Department has not set a new timeframe for deciding whether to give TransCanada the permit, referring only to an earlier estimate of no sooner than the first quarter of 2013, allowing construction to start that quarter.

Opponents of XL say the modified route still puts Nebraska's key water resources in jeopardy and others are demanding a completely new environmental review, ignoring what has taken place since September 2008.

Charlie Drevna, president of the American Fuel & Petrochemical Manufacturers, said in a statement that the "anti-fossil fuels extremists opposed to the construction of the Keystone XL pipeline will look for any reason, no matter how baseless and absurd, to oppose the vital pipeline that would benefit millions of American consumers, create thousands of jobs and increase America's economic and national security."

Sen. Lisa Murkowski of Alaska said in a statement that opening the way for Canadian oil to reach Gulf Coast refineries "should be a simple economic decision. It will not only enhance our trading relationship with one of our greatest allies, it will also bring badly needed jobs and reduce our oil imports from OPEC."

If it can survive a fresh round of contentious debate and if President Barack Obama gets re-elected in November, TransCanada expects its rerouted Keystone XL line will offer 830,000 bpd of capacity by late 2014 or early 2015.

"This project has been caught up in presidential politics long enough. It's time to get to work," she said.

Current situation discourages domestic production

TransCanada said in its new application that the up-to-$20 per barrel premium Americans are paying for internationally benchmarked Brent crude over West Texas Intermediate from the U.S. midcontinent has hiked gasoline prices while discouraging U.S. domestic oil production.

It said disparity between international and U.S. crudes that has emerged and persisted over the past three years since XL was first proposed can be solved if XL proceeds.

The same argument is being made by the two pipeline companies and oil producers as they compete for shipper interest to deliver crude from Alberta and the Bakken to Eastern Canada and possibly the Atlantic Seaboard.

ENB's eastern access strategy

Enbridge said it expects to spend upwards of C$2 billion on what it describes as its "next wave of capital and growth opportunities" for the company under its Eastern Access strategy, which is rapidly diverting attention from its hotly contested Northern Gateway proposal.

The push east is designed to handle growing volumes from the Alberta oil sands and the Bakken.

The current target is to connect with Montreal-area refineries, but Daniel disclosed that Enbridge also has its eye fixed on further extensions to possibly Quebec City, Saint John in New Brunswick and Philadelphia.

He said refineries in those areas see "some significant advantage" in being able to access oil sands and Bakken crudes.

Company President Al Monaco said Enbridge is "especially bullish" about the future of oil sands production, along with an uptick in U.S. shale oil volumes from the Bakken, Permian basin, Eagle Ford and Niobrara plays and is "making very good progress in commercial discussions" with prospective shippers.

Monaco said the first stage of the Eastern Access plan needs approval from Canada's National Energy Board, or NEB, for reversal of Line 9 by next spring to initially carry 150,000 bpd of crude across Ontario from Sarnia to Westover and ultimately expand capacity to 250,000 bpd.

Linked to that is replacement and expansion work on Line 6B from Chicago/Flanagan in Illinois to Sarnia, with a spur line to Toledo, Ohio, plus a 50,000 bpd addition to the 500,000 bpd Line 5 from the Enbridge Mainline to Sarnia.

Also included in the proposed C$2 billion investment is a continuation of Line 9 from Westover to Montreal.

NEB is scheduled to start public hearings May 23 on the Line 9 application, which faces stiff opposition from First Nations and environmental groups.

Enbridge reported that it now expects to spend C$26 billion on secured and risk-adjusted pipeline projects over the 2011-15 period, up C$6 billion from its previous estimate last October, and said it is investigating another C$30 billion worth of opportunities. ●

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THREE FORKS DRILLING

Pads drilling."

He also said, "we expect to have 50 percent of our rig fleet drilling ECO-Pads by year-end 2012 and up to 75 percent by the end of 2013."

Hanging onto other 10%

In the question and answer session that followed Hume's May 3 presentation, Noel A. Parks of Ladenburg Thalmann & Co.'s research division, asked him to give listeners a sense of how much of Continental's acreage in the Bakken was not suitable for ECO-Pad drilling because some of the company's tracts were "too isolated and so forth."

Hume predicted "most" of Continental's acreage would be suitable: "Right now, if I had to make a guess," he said, "I'd say 90 percent of our acreage would be disposed to ECO-Pad development. And even where we just have a single 1,280 spacing unit, we can do multiple wells from a common pad. So we can probably do three wells in one horizon for a pad."

What about the 10 percent that wasn't suitable, would Continental put it for sale, Parks asked.

No, Hume said, the company would likely "go ahead and develop it. … As we learn more and more about these lower benches of the Three Forks, even on that 10 percent we'll probably be able to do pad drilling on multiple horizons."

Making it clear that Continental was "very bullish on consolidating acreage in the Bakken," Hume said in that petroleum system there were "always six or eight packages out there of various sizes to compete for," and although Continental "obviously can't buy every one" it evaluated, it was still "always competing" for Bakken acreage.

"We've got our cost structure down. We're probably the lowest-cost operator and best performer up there right now just due to our size and the team we've put together," he said.

A few 40-stage completions

As reported in the May 6 edition of Petroleum News Bakken, Continental predicted a 47-50 percent production growth in 2012, with 107 percent coming from North Dakota alone.

The company's first-quarter production of 85,526 barrels of oil equivalent per day was 14 percent higher than its fourth-quarter 2011 output of 75,219 boe per day, and 66 percent more than its 51,663 boe a day average in first quarter 2011.

Continental entered May with production in excess of 91,000 boe a day.

But no new rigs would be required to meet the stepped up drilling because the company had reduced its spud-to-spud drilling cycle time for Bakken wells by approximately 30 percent in the last six months, Continental Chairman and Chief Executive Officer Harold Hamm said in a press release in advance of the May 3 conference call.

"Along with good well performance, the two factors driving our results are faster drilling cycle times and our increased working interest ownership in Bakken wells," he said.

Consequently, Hume was asked May 3 by Hsulin Peng of Robert W. Baird & Co.'s research division, what kind of cost savings had Continental realized from the 30 percent reduction in drilling cycle time.

He said, looking at an average of $20,000 per day rig rate, "by shaving off one week's time," the savings was about "$300,000 net per well."

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ECO-Pad drilling site.

Strong production from 30-stage completions

Hume was also asked whether the increase in Continental's production was more about additional wells going online or because of enhanced well performance.

"Well, there's predominantly more wells coming on production. We are seeing better performance as we're doing more stages. We're spending more money on the wells than we did a year ago at this time. And last fall, we shifted from a 24-stage completion to a 30-stage completion. We're sprinkling in a few 40-stage completions at this time. We are seeing very strong production from the 30-stage wells," Hume said, predicting an upgrade in the company's reserves.

He also said as Continental starts doing "more density drilling, we'll get more effective fracture swarms around the well bores and build better drainage patterns for the well bores. So that's been the history in resource plays. We feel that we'll carry on in the Bakken, and that's a future upside we hope to bring to this play (Three Forks), but we're not there yet."

More rigs likely going into 2013

In its May 2 release, Continental said it was increasing its 2012 capital expenditures from $1.75 billion to $2.3 billion, with nearly all of the additional spending going directly to Bakken drilling.

On May 3 Hume said "it's all entirely" going to Bakken drilling.

Andrew Coleman from the research division of Raymond James & Associates remarked that it looked like Continental's capex was "pretty front end-loaded." He asked whether Hume thought spending and activity might pick-up in the second half of 2012, should the company revise upwards some of its EURs.

"Earlier in the year, when we were talking about our capex … we were talking about adding rigs to the Bakken play as we went through the year," Hume replied.

"We've been able — as Harold said earlier — (to get) more completions per rig, and so we're getting a better capital spend due to that. … So we've … already accomplished part of the goal. That being said, we have the personnel put together and the capacity to expand rig count going into 2013 and '14. And with our inventory and if the commodity prices hold on, I fully expect to continue to expand our activity going forward. Over the next several years, not just the remainder of 2012, but over the next several years, I expect us to continue to grow our (rig) count if the economic environment holds as it is right now," Hume said. ●

Editor's note: Some of the quotes in this article came from Seeking Alpha transcriptions at www.seekingalpha.com, a website for stock market opinion and analysis and lively finance discussion. Numerous company earnings presentations and Q&A sessions are available to visitors.

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Oil transport picture changing

In Continental Resources May 3 first quarter earnings conference call, company president and COO Jeff Hume noted there had been a lot of interest in "differentials on pipe barrels delivered to Clearbrook, Minnesota and Guernsey, Wyoming markets" and how it was impacting Continental's net wellhead price realizations.

"All of our Red River … oil is gathered at the wellhead and piped to Guernsey … where it's marketed," he said. "Roughly half of our Bakken oil is currently being railed to markets where it is priced against waterborne barrels, mainly Brent or Louisiana Light Sweet, which has been $17 to $23 higher than WTI during the first quarter of 2012."

The cost of rail transport has been running much higher than pipeline, "about $20 to $22 per barrel all-in from the wellhead to the ultimate end market. But even though the rail transportation cost is higher … delivery to the coastal markets (via rail) has provided superior net pricing lately due to the recent high differentials experienced at Clearbrook and Guernsey, especially during March and April," he said.

Because pipelines are running at full capacity, he said, Continental expects its "incremental growth over the next 18 to 24 months to be shipped by rail," noting the company wasn't have any problem getting railcars and capacity.

"We reported (May 2) an average oil differential for the first quarter of 2012 of $12.27 per barrel below WTI, which is considerably above our guidance range of $7 to $9 for a year as a whole. Due to the spikes in oil differentials in early 2012 and continued supply-demand volatility at Clearbrook and Guernsey, we now expect average differentials for 2012 to be in the range of $9 to $11 per barrel. That's the long-haul transportation picture," Hume said.

When asked by Petroleum News Bakken what Continental paid for shipping oil via pipeline, he said, "The cost to deliver our oil from the well to the market via pipeline is approximately $6 per barrel."

—KAY CASHMAN